CITY OF WILMINGTON, NC

BID INVITATION

BIDS ARE DUE: **SEPTEMBER 23, 2025, at 3:00 PM**

PRE-BID MEETING: **AUGUST 26, 2025, at 3:00 PM**

PROJECT NAME: **GREENVILLE LOOP TRAIL SECTION 3**
GREENVILLE LOOP SIDEWALK

PROJECT NUMBER: **2TRST1591-2TRSW2310**

CONTRACT NUMBER: **GLT-ST-0925**

PROJECT DIRECTOR: **MIKE NAKLICKI – 910-341-5897**

PROJECT MANAGER: **ANTHONY GEATHERS – 910-341-5889**

PROJECT ENGINEER: **STEWART (TEDD DUNCAN) – 980-875-1991**

SUBMIT BIDS TO: **PURCHASING MANAGER**
P. O. BOX 1810
929 N. FRONT ST., 10th FLOOR
WILMINGTON, N. C. 28402-1810
(910) 341-7830

BIDDERS NAME: _____

ADDRESS: _____

_____

TELEPHONE: _____

EMAIL: _____

GREENVILLE LOOP TRAIL SECTION 3
GLT-ST-0925

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ADVERTISEMENT FOR BID
CITY OF WILMINGTON, NC
GREENVILLE LOOP TRAIL SECTION 3-GREENVILLE LOOP SIDEWALK
CONTRACT NUMBER: GLT-ST-0925

Pursuant to North Carolina General Statute 143-129, sealed proposals addressed to the Purchasing Manager, P. O. Box 1810, 929 N. Front Street, 10TH Floor Wilmington, NC 28402, and marked "GREENVILLE LOOP TRAIL SECTION 3-GREENVILLE LOOP SIDEWALK'' will be received until 3:00 p.m., Tuesday, September 23, 2025, at which time they will be publicly opened and read at the Purchasing Division, 929 N. Front Street, 10th Floor Room 1069, Wilmington, NC. The City will receive SINGLE PRIME BIDS ONLY for this project.

Project Description: This project is part of the Multi-use path/trail system developed by the MPWO as connecting greenway system. This section of the project is from Park Ave to Old Military Rd that connects to the Section 2 of the Greenville Loop MUP.

Project Description: This is a connecting sidewalk project between Shinnwood & Old Military Road on the East side of Greenville Loop Rd. This sidewalk provides safety for school walking and pedestrians.

All firms submitting bids for the proposed work must be properly licensed under Chapter 87, N. C. General Statutes. The bidder's license number must appear on the outside of the envelope.

In accordance with the City of Wilmington's Minority/Disadvantaged Business Policy, the bidder shall make good faith efforts, as defined by the Bid Specifications, to subcontract 14% of the dollar value of the prime contract to businesses which are at least 51% owned and controlled by minority, socially, and/or economically disadvantaged individuals (MBE/DBE's). A complete copy of the City of Wilmington's MBE/WBE policy is available for inspection at the Purchasing Manager's Office.

Potential Subcontract opportunities which may exist on this project include, but may not be limited to Concrete, Hauling, Signage, Traffic Control, Asphalt Paving, Pavement Markings, Grading, Utilities, Signal, Landscaping, Fencing, Suppliers, and other items not specifically referenced herein.

If the bidder fails to achieve the contract goal stated herein, it is required to provide documentation demonstrating that it made a good faith effort in attempting to meet the established goals. A bid which fails to meet these requirements will be considered non-responsive and will be rejected.

A Pre-Bid Conference will be held at 3:00 p.m., Tuesday, August 26, 2025, at 929 N. Front Street, 10th Floor Room 1069, Wilmington, NC. All parties interested in the project are invited to attend.

Plans, Specifications and Bid Documents can be obtained by clicking on the item. For assistance, please contact Christine Karem at christine.karem@wilmingtonnc.gov.

Potential subcontractors may secure a list of potential prime contractors from the City's website, www.wilmingtonnc.gov.

The City of Wilmington does not discriminate on the basis of race, sex, color, age, national origin, religion or disability in its employment opportunities, programs, services, or activities.

Bids for this project shall be guaranteed by all bidders for a period of 90 calendar days following the bid opening. **The City of Wilmington Reserves the Right to Reject any and all Bids.**

Daryle L. Parker
Purchasing Manager, August 19, 2025

BIDDER'S CHECKLIST

1. READ AND UNDERSTAND ALL SPECIAL NOTICES.

2. SIGN AFFIDAVIT OF NON-COLLUSION A-1 AND A-2.
   HAVE THIRD PARTY NOTARIZE PAGE A-3

3. SIGN AFFIDAVIT OF COMPLIANCE WITH NC E-VERIFY STATUTES

4. READ AND UNDERSTAND MBE/DBE PROVISIONS MBE-1 TO MBE-4.

5. COMPLETE, SIGN AND SUBMIT WITH THE BID, AFFIDAVIT A "AFFIDAVIT OF GOOD FAITH COMPLIANCE" LISTING OF THE GOOD FAITH EFFORT INDICATING ALL ACTIONS UNDERTAKEN, AS DESCRIBED IN THE FORM, TO RECRUIT MINORITY PARTICIPATION ON THIS PROJECT. (AFFIDAVIT A)

6. SUBMIT A LISTING OF PARTICIPATING SUBCONTRACTORS AND SUPPLIERS.

7. PORTION OF WORK TO BE PERFORMED BY M/WBE FIRMS (AFFIDAVIT C)

8. BIDDERS GOOD FAITH EFFORTS (AFFIDAVIT D)

9. LIST ALL FIRMS CONTACTED TO PERFORM SUBCONTRACT WORK IN ACCORDANCE WITH THE SPECIAL NOTICE. (Subcontractor Contact Schedule)

10. COMPLETE THE PROPOSAL SECTION AND SIGN.

11. ALL ADDENDA ISSUED FOR THIS PROJECT HAVE BEEN SIGNED OR ACKNOWLEDGED ON THE PROPOSAL PAGE.

12. THE BID SURETY IS ENCLOSED AND PROPERLY EXECUTED.
    REFERENCE PARAGRAPH G-1.04.2, PAGE G-2.

13. BID ENVELOPE SEALED AND MARKED WITH THE BIDDERS NAME, LICENSE NUMBER, PROJECT NAME AND NUMBER. NOTE: MULTIPLRIME AND SINGLE PRIME BIDS FROM THE SAME BIDDER MUST BE IN SEPARATE CLEARLY MARKED ENVELOPES.

14. ENVELOPE ADDRESSED AND MARKED:

    PURCHASING MANAGER
    CITY OF WILMINGTON
    PO BOX 1810
    929 N. FRONT STREET, 10th FLOOR
    WILMINGTON, NC 28402
    BID NAME: _____

15. THE BID MUST BE MAILED OR DELIVERED TO THE ABOVE ADDRESS SO THAT RECEIPT IS PRIOR TO THE TIME AND DATE OF THE BID OPENING. BIDS RECEIVED AFTER THE SPECIFIED TIME WILL NOT BE CONSIDERED. THE CITY OF WILMINGTON ASSUMES NO RESPONSIBILITY FOR MAIL DELIVERY.

SPECIAL NOTICE TO ALL BIDDERS

MARCH 23, 1990 REV: 3-2020

1. Bid Rigging Affidavit

In accordance with the City of Wilmington's Bid Rigging and Conflict of Interest Ordinances, an Affidavit and Certificate of Non-Collusion and Non-Suspension is enclosed, Pages A-1, A-2 and A-3. The affidavit must be properly filled out, sealed and attested in order for your bid to be considered.

2. Subletting

Paragraph G-1.15, SUBLETTING OR ASSIGNMENT OF CONTRACT, of the City's General Specifications. All bidders must submit with their bid a listing of subcontractors contacted to submit proposals for this project. The listing must indicate the subcontractors to be used, the dollar amount of the proposed subcontract work, and type of work to be performed. If no subcontractors are to be utilized, this must be specified. This must be submitted at the time of the bid opening in order for the bid to be considered.

If subcontract firms are contacted but their proposals rejected for any reason the bidder must complete the justification form included in the bid document.

3. The City reserves the right to waive any immaterial defects in the bid documents.

4. Minority Business Policy

The MBE/WBE/HUB/DBE statement, MBE-4, must be properly filled out in order for your bid to be considered.

5. Federal Funding

This project may be funded in whole or in part with Federal funds and all bidders are advised to pay strict attention to the Federal requirements which may be attached. Bid packages which include Affirmative Action under Section 3 require that each bidder submit with his bid an Affirmative Action Plan. The City will not require bidders to submit their plan with the bid. However, it will be required and must be submitted by the lowest responsible bidder and approved by the City prior to beginning work.

Paragraph 5 applies only if Federal Regulations are included in the Bid Documents.

If you have any questions concerning these requirements, please contact my office.

Daryle L. Parker
Purchasing Manager

STATE OF NORTH CAROLINA

COUNTY OF NEW HANOVER

AFFIDAVIT AND CERTIFICATE OF NON-COLLUSION, NON-SUSPENSION AND NON-CONVICTION

The undersigned, being first duly sworn, deposes and says:

1. I understand that for the purposes of this affidavit, the term "bidder" shall include the person(s), firm(s), or corporation(s) signing this affidavit, the undersigned's subcontractor(s), subsidiary(ies) and affiliate(s) and any officer, director, employee or agent of the bidder; and the term "conviction" shall include guilty pleas, pleadings of nolo contendere and similar pleas.

2. This Affidavit and Certificate is made in accordance with Article 3 of Chapter 133 of the North Carolina General Statutes; I certify that this proposal is made without prior understanding, agreement, or connection with any person(s), firm(s), or corporation(s) making bids or proposals; I further certify that the bidder has not entered into any agreement with any other bidder or prospective bidder or with any other person(s), firm(s) or corporation(s) relating to the price named in said proposal, nor any agreement or arrangement under which any person(s), firm(s) or corporation(s) is to refrain from bidding, nor any agreement or arrangement for any act or omission in restraint of free competition among bidders; I understand collusive bidding is a violation of state and federal law and can result in fines, prison sentences, and civil damage awards; and I further certify that the bidder will abide by all terms of this bid or proposal.

3. The bidder is not suspended or debarred from bidding by any federal or state governmental agency that is providing funds for this contract.

4. The bidder is not presently charged in an indictment or information with engaging in any conspiracy, combination, or other unlawful act in restraint of trade or any similar charges in any federal court or a court of this or any other state.

5. The bidder, within one year immediately preceding the date of this affidavit, has not been convicted of charges or engaging in any conspiracy, combination, or other unlawful act in restraint of trade or similar charges in any federal court or a court of this or any other state.

6. If, during the time of this proposal, from the date advertised to the date bids are opened, the bidder is indicted or convicted of bid-rigging, I understand this proposal shall be rejected and not considered for award.

7. I hereby affirm that all information contained in this affidavit is true, correct, accurate and complete, and any untrue, incorrect, inaccurate or incomplete statements will result in the disqualification and rejection of this proposal. I certify that I am authorized to sign this bid and to make the representations set forth herein on behalf of myself and the bidder.

This the _____ day of _____, 2025.

COMPANY NAME _____

BY: _____
(Owner, Partner, or Corporate President, Vice President or Assistant Vice President only)

ATTEST:

_____
(Secretary, Assistant Secretary, Cashier or Assistant Cashier only)

(CORPORATE SEAL)

(TO BE EXECUTED ON BEHALF OF THE CONTRACTOR)

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public, certify that
(Name)
_____ personally came
(Name of Secretary, Assist. Sec., Cashier, Assist. Cashier)

before me this day and acknowledged that he (she) is _____
(Secretary, Assist. Sec.,
_____ of _____, a
Cashier, Assist. Cashier) (Name of Corporation)

corporation, and that by authority duly given and as the act of the corporation, the foregoing Affidavit

was signed in its name by its _____,
(President, Vice President, Assist. Vice President)

sealed with its corporate seal, and attest by himself (or herself) as its

_____.
(Secretary, Assist. Sec., Cashier, Assist. Cashier)

WITNESS my hand and official seal, this the _____ day of _____, 2025.

_____
Notary Public

My Commission Expires: _____

(NOTARY SEAL)

Rev. 3/98 AFF-MBE.DOC

STATE OF NORTH CAROLINA

COUNTY OF NEW HANOVER

AFFIDAVIT of COMPLIANCE with N.C. E-VERIFY STATUTES

I, _____ (hereinafter the "Affiant"), duly authorized by and on behalf of _____ (hereinafter the "Employer") after being first duly sworn deposes and says as follows:

1. I am the _____ (President, Manager, CEO, etc.) of the Employer and possess the full authority to speak for and on behalf of the Employer identified above.

2. Employer understands that "E-Verify" means the federal E-Verify program operated by the United States Dept. of Homeland Security and other federal agencies, or any successor or equivalent program used to verify the work authorization of newly hired employees pursuant to federal law.

3. ____ Employer employs 25 or more employees in the State of North Carolina, and is in compliance with the provisions of N.C. Gen. Stat. §64-26. Employer has verified the work authorization of its employees through E-Verify and shall retain the records of verification for a period of at least one year.

____ Employer employs fewer than 25 Employees and is therefore not subject to the provisions of N.C. Gen. Stat. §64-26.

4. All subcontractors engaged by or to be engaged by Employer have or will have likewise complied with the provisions of N.C. Gen. Stat. §64-26.

5. Employer shall keep the City of Wilmington informed of any change in its status pursuant to Article 2 of Chapter 64 of the North Carolina General Statutes.

Further this affiant sayeth not.

This the _____ day of _____, 20____.

_____
Affiant

STATE OF NORTH CAROLINA
COUNTY OF _____

Sworn to and subscribed before me, this the _____ day of _____, 20____.

_____ [NOTARY SEAL]
Notary Public

My commission expires: _____

CITY OF WILMINGTON

MBE/WBE/HUB/DBE POLICY STATEMENT

SPECIAL NOTICE

1. ALL FIRMS SUBMITTING BIDS FOR THIS PROJECT MUST MAKE A GOOD FAITH EFFORT, AS DEFINED ON PAGES MBE-1 TO MBE-3, TO SUBCONTRACT 14% OF THE WORK TO CERTIFIED MBE/WBE/HUB/DBE FIRMS. THIS REQUIREMENT APPLIES EVEN THOUGH THE BIDDER HAS THE CAPABILITY OF PERFORMING ALL WORK WITH HIS OWN FORCES OR IF THE BIDDER IS A CERTIFIED MBE/WBE CONTRACTOR.

2. **AS PART OF THE SUBMITTED BID DOCUMENT BIDDERS MUST SUBMIT A LISTING OF ALL SUBCONTRACTORS CONTACTED OR ATTEMPTED TO CONTACT FOR WORK ON THIS CONTRACT. THE LIST MUST INCLUDE THE FIRM NAME, CONTACT PERSON, PHONE NUMBER, TYPE OF SUBCONTRACT WORK, INDICATION AS TO MBE/WBE/HUB/DBE FIRM OR NON-MBE/WBE/HUB/DBE FIRM, AND DOLLAR AMOUNT OF THE WORK. THE LISTING MUST INDICATE THE FIRM TO BE UTILIZED FOR THE SUBCONTRACT WORK. A FORM IS INCLUDED HEREIN FOR THIS LISTING.**

A FORM IS INCLUDED HEREIN FOR THIS PURPOSE HOWEVER, BIDDERS MAY SUBMIT THE DATA ON THEIR OWN FORM.

3. AS PART OF THE SUBMITTED BID DOCUMENTS, ALL BIDDERS MUST SUBMIT, THE ENCLOSED "AFFIDAVIT OF GOOD FAITH COMPLIANCE". THE AFFIDAVIT MUST INCLUDE EVIDENCE OF THE GOOD FAITH EFFORTS MADE BY THE BIDDER TO CONTRACT WITH AND HIRE MBE/WBE/HUB/DBE FIRMS AS SUBCONTRQACTORS FOR THIS PROJECT.

A LISTING OF GOOD FAITH EFFORTS THAT THE CITY WILL REVIEW AND CONSIDER IS CONTAINED IN THE BID DOCUMENT.

"The bidder/proposer shall make good faith efforts, as defined in the bid specifications, to subcontract **14%** percent of the dollar value of the prime contract to business owned and/or controlled by minority, socially, and or economically disadvantaged individuals (MBE/WBE/HUB/DBE's).

Bidders are required to submit information concerning MBE/WBE/HUB/DBE's which will participate in the contract. The information will include (1) name and address of each MBE/WBE/HUB/DBE; (2) a description of the work to be performed by named firm; and (3) the dollar value of the work of the contract. If the bidder fails to achieve the contract goal stated herein, it is required to provide documentation demonstrating that it made good faith efforts in attempting to meet established goals. A bid that fails to meet these requirements will be considered non-responsive."

MBESUPP 6/93

SPECIAL PROVISION
MINORITY/DISADVANTAGED BUSINESS ENTERPRISE PROGRAM
CITY OF WILMINGTON, NC

POLICY:

It is the policy of the City of Wilmington that MBE/WBE/HUB/DBE enterprises as defined in NCGS 143-128(g)(1)(2) and (3) shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part by City funds under this agreement. Consequently, the MBE/WBE/HUB/DBE requirements of NCGS 143-128 apply to this bid and any subsequent contract.

MBE/WBE/HUB/DBE OBLIGATION:

The City and its contractor agree to ensure that MBE/WBE/HUB/DBE's have the maximum opportunity to participate in the performance of contract and subcontracts financed in whole or in part with City of Wilmington funds provided under this agreement. In this regard, bidders and contractors shall take all necessary and reasonable steps in accordance with NCGS 143-128 to ensure that MBE/WBE/HUB/DBE firms have the maximum opportunity to compete and perform under this bid, any change orders and any subsequent contract. The City of Wilmington and its contractors shall not discriminate on the basis of race, color, national origin, or sex in the award and/or performance of this contract.

NOTICE:

All bidders, potential contractors, or subcontractors for this contract are hereby notified that failure to carry out the City of Wilmington policy and MBE/WBE/HUB/DBE obligation, as set forth herein, shall constitute a breach of contract which may result in the termination of the contract, or other such remedy as deemed appropriate by the City.

SUBCONTRACT CLAUSES:

All bidders and potential contractors hereby assure the City that they will include the above clauses in all subcontracts which offer further subcontracting opportunities. The terms, conditions and requirements of each contract between the contractor and each subcontractor performing work under a subdivision of branch of work listed in the bid documents shall incorporated by reference the terms, conditions and requirements of this contract between the CITY and the CONTRACTOR.

CONTRACT AWARD:

Bidders are hereby advised that meeting the MBE/WBE/HUB/DBE subcontract goals or making a "GOOD FAITH EFFORT" as defined below to meet such goals are conditions for being awarded this contract. The City proposes to award the contract to the lowest responsible bidder submitting a reasonable bid, provided s/he has made a "GOOD FAITH EFFORT" as defined below to meet the established MBE/WBE/HUB/DBE participation goals.

Bidders are advised that the City has the sole authority to determine if the bidder has made a "GOOD FAITH EFFORT" toward meeting the MBE/WBE/HUB/DBE goals to qualify for contract award. The City reserves the right to reject any and all bids submitted.

SUBSTITUTION OF MBE/WBE/HUB/DBE SUBCONTRACTORS
MBE/WBE/HUB/DBE firms identified in the bid document may not be substituted or replaced without just cause and only with the written approval of the CITY. If a substitution is agreed to by the CITY, the CONTRACTOR must make a good faith effort to replace the MBE/WBE/HUB/DBE with another MBE/WBE/HUB/DBE firm.

MBE/WBE/HUB/DBE SUBCONTRACT GOALS:

The attainment of goals established for this contract are to be measured as a percentage of the total dollar value of the contract. The goals established for this contract are as follows: 14%* MBE/WBE/HUB/DBE *
*MBE/WBE/HUB/DBE GOALS ARE ACCOMPLISHED VIA SUBCONTRACTS PERFORMED BY CERTIFIED BUSINESSES. SUBCONTRACTS MAY INCLUDE SUPPLYING OF MATERIALS.

AVAILABLE MBEWBE/HUB/DBE's

MBE/WBE/HUB/DBE firms may be utilized by the bidder provided they meet the minimum requirements as established by NCGS 143-128 and are certified seven (7) days prior to award in accordance with the MBE/WBE/HUB/DBE program.

Bidders may access the N. C. Dept. of Administration, NCDOT web site for certified firms. Failure to achieve the goal and failure to contact known MBE/WBE/HUB/DBE firms on all lists referenced herein may not qualify as a good faith effort to identify and hire MBE/WBE/HUB/DBE firms.

MBE/WBE/HUB/DBE firms certified by the Department of Transportation or Department of Administration may be counted toward to established goal.

Firms listed by the bidder as certified which are not on the Department of Transportation or Department of Administration's list of certified firms must provide evidence of certification.

CONTRACTORS REQUIRED SUBMISSIONS:

If the bidder fails to meet the contract goals established herein, s/he must submit information, which will assist the City in determining whether or not the bidder made acceptable "GOOD FAITH EFFORTS" to meet the contract goals. **Failure to meet the goals by lack of "GOOD FAITH EFFORTS" will disqualify the bidder's proposal**.

The bidder shall complete all forms included herein which pertain the verification of MBE/WBE/HUB/DBE participation and/or good faith efforts made as part of the bid.

DEFINITION
"GOOD FAITH EFFORT"

In accordance with the North Carolina Administrative Code 01-NCAC 301.0101 and the North Carolina General Statutes, the bidder must earn a minimum of 50 points from the good faith efforts listed below in order to be deemed to have made a good faith effort. If the bidder meets the 14% goal, the bidder shall be deemed to have met the good faith effort.

The following is a list of items which the contractor and the city may use in making a determination as to the acceptability of contractors "GOOD FAITH EFFORT" in meeting the goals established herein.

(1) Contacting minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor or available on State or local government maintained lists at least 10 days before the bid or proposal date and notifying them of the nature and scope of the work to be performed. **10 POINTS**

(2) Making the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bid or proposals are due. **10 POINTS**

(3) Breaking down or combining elements of work into economically feasible units to facilitate minority participation. **15 POINTS**

(4) Working with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses. **10 POINTS**

(5) Attending any prebid meetings scheduled by the public owner. **10 POINTS**

(6) Providing assistance in getting required bonding or insurance or providing alternatives to bonding or insurance for subcontractors. **20 POINTS**

(7) Negotiating in good faith with interested minority businesses and not rejecting them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing. **15 POINTS**

(8) Providing assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisting minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit. **25 POINTS**

(9) Negotiating joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible. **20 POINTS**

(10) Providing quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands. **20 POINTS**

PAY REQUESTS AND MAINTENANCE OF RECORDS:

The contractor shall maintain adequate records of the MBE/WBE/HUB/DBE's performance and payments and shall submit regular reports to the City. These reports shall be sent with the contractors monthly "REQUEST FOR CONTRACT PAYMENT". The request shall include a breakdown of the amount of the payment to be made by the City which will be paid to the MBE/WBE/HUB/DBE's identified in the bid documents.

PROHIBITED AGREEMENTS:

Agreements between the bidder/proposer and a MBE/WBE/HUB/DBE in which the MBE/WBE/HUB/DBE promises not to provide subcontracting quotations to other bidders/proposers are prohibited.

ATTACH THIS PAGE TO THE BID

City of Wilmington - AFFIDAVIT A – **"AFFIDAVIT OF GOOD FAITH COMPLIANCE"**

Listing of the Good Faith Effort

Affidavit of_____
(Name of Bidder)

I have made a good faith effort to comply under the following areas checked:

The bidder must earn a minimum of 50 points from the good faith efforts listed below in order to be deemed to have made a good faith effort.

- ☐ **1 -** Contacted minority businesses that reasonably could have been expected to submit a quote and that were known to the contractor, or available on State or local government maintained lists, at least 10 days before the bid date and notified them of the nature and scope of the work to be performed. **10 points**
- ☐ **2**.-Made the construction plans, specifications and requirements available for review by prospective minority businesses, or providing these documents to them at least 10 days before the bids are due. **10 points**
- ☐ **3** - Broken down or combined elements of work into economically feasible units to facilitate minority participation. **15 points**
- ☐ **4** - Worked with minority trade, community, or contractor organizations identified by the Office of Historically Underutilized Businesses and included in the bid documents that provide assistance in recruitment of minority businesses. **10 points**
- ☐ **5** - Attended prebid meetings scheduled by the public owner. **10 points**
- ☐ **6** - Provided assistance in getting required bonding or insurance or provided alternatives to bonding or insurance for subcontractors. **20 points**
- ☐ **7** - Negotiated in good faith with interested minority businesses and did not reject them as unqualified without sound reasons based on their capabilities. Any rejection of a minority business based on lack of qualification should have the reasons documented in writing. **15 points**
- ☐ **8** - Provided assistance to an otherwise qualified minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letters of credit, including waiving credit that is ordinarily required. Assisted minority businesses in obtaining the same unit pricing with the bidder's suppliers in order to help minority businesses in establishing credit. **25 points**
- ☐ **9** - Negotiated joint venture and partnership arrangements with minority businesses in order to increase opportunities for minority business participation on a public construction or repair project when possible. **20 points**
- ☐ **10** - Provided quick pay agreements and policies to enable minority contractors and suppliers to meet cash-flow demands. **20 points**

Total Points_____

In accordance with GS143-128.2(d) the undersigned will enter into a formal agreement with the firms listed in the Identification of Minority Business Participation schedule conditional upon execution of a contract with the Owner. Failure to abide by this statutory provision will constitute a breach of the contract.
The undersigned hereby certifies that he or she has read the terms of the minority business commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of _____, County of_____
Subscribed and sworn to before me this _____day of _____2025
Notary Public_____
My commission expires. _____

City of Wilmington - AFFIDAVIT C - Portion of the Work to be Performed by Minority Firms

**********(NOTE: THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL)*********

If the portion of the work to be executed by minority businesses as defined in GS143-128.2(g) is equal to or greater than 14% of the bidders total contract price, then the bidder must complete this affidavit.
This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of _____ I do hereby certify that on the
(Name of Bidder)

_____
(Project Name)

Project ID#_____ Amount of Bid $_____

I will expend a minimum of _____% of the total dollar amount of the contract with minority business enterprises. Minority businesses will be employed as construction subcontractors, vendors, suppliers or providers of professional services. Such work will be subcontracted to the following firms listed below. Attach additional sheets if required

Name and Phone Number	*Minority Category	Work description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

Pursuant to GS143-128.2(d), the undersigned will enter into a formal agreement with Minority Firms for work listed in this schedule conditional upon execution of a contract with the Owner. Failure to fulfill this commitment may constitute a breach of the contract.

The undersigned hereby certifies that he or she has read the terms of this commitment and is authorized to bind the bidder to the commitment herein set forth.

Date:_____ Name of Authorized Officer:_____

SEAL

Signature:_____

Title:_____

State of _____, County of _____
Subscribed and sworn to before me this _____ day of _____ 2025
Notary Public_____
My commission expires_____

City of Wilmington AFFIDAVIT D – Good Faith Efforts

**********(NOTE: THIS FORM IS NOT TO BE SUBMITTED WITH THE BID PROPOSAL)*********

If the goal of 14% participation by minority business **is not** achieved, the Bidder shall provide the following documentation to the Owner of his good faith efforts. This affidavit shall be provided by the apparent lowest responsible, responsive bidder within **72 hours** after notification of being low bidder.

Affidavit of: _____
(Name of Bidder)

Project Name: _____

I do certify the attached documentation as true and accurate representation of my good faith efforts.
(Attach additional sheets if required)

Name and Phone Number	*Minority Category	Work description	Dollar Value

*Minority categories: Black, African American (**B**), Hispanic (**H**), Asian American (**A**) American Indian (**I**), Female (**F**) Socially and Economically Disadvantaged (**D**)

Documentation of the Bidder's good faith efforts to meet the goals set forth in these provisions. Examples of documentation include, but are not limited to, the following evidence:

A. Copies of solicitations for quotes to at least three (3) minority business firms from the source list provided by the State for each subcontract to be let under this contract (if 3 or more firms are shown on the source list). Each solicitation shall contain a specific description of the work to be subcontracted, location where bid documents can be reviewed, representative of the Prime Bidder to contact, and location, date and time when quotes must be received.

B. Copies of quotes or responses received from each firm responding to the solicitation.

C. A telephone log of follow-up calls to each firm sent a solicitation.

D. For subcontracts where a minority business firm is not considered the lowest responsible sub-bidder, copies of quotes received from all firms submitting quotes for that particular subcontract.

E. Documentation of any contacts or correspondence to minority business, community, or contractor organizations in an attempt to meet the goal.

F. Copy of pre-bid roster.

G. Letter documenting efforts to provide assistance in obtaining required bonding or insurance for minority business.

H. Letter detailing reasons for rejection of minority business due to lack of qualification.

I. Letter documenting proposed assistance offered to minority business in need of equipment, loan capital, lines of credit, or joint pay agreements to secure loans, supplies, or letter of credit, including waiving credit that is ordinarily required.

Failure to provide the documentation as listed in these provisions may result in rejection of the bid and award to the next lowest responsible and responsive bidder.

Date:_____ Name of Authorized Officer:_____

Signature:_____

Title:_____

SEAL

State of _____, County of _____

Subscribed and sworn to before me this _____ day of _____ 2025

Notary Public_____

My commission expires _____

POTENTIAL SUBCONTRACTING OPPORTUNITIES

CONTRACT NAME: GREENVILLE LOOP TRAIL SECTION 3
GREENVILLE LOOP SIDEWALK

CONTRACT NUMBER: GLT-ST-0925

WORK ITEM DESCRIPTION: Concrete, Hauling, Traffic Control, Signage, Grading, Asphalt Paving, Pavement Markings, Utilities, Signal, Landscaping, Fencing, Suppliers, and other items not specifically referenced herein.

THE ABOVE LISTED AREAS OF SUBCONTRACT OPPORTUNITIES ARE THE AREAS THAT HAVE BEEN IDENTIFIED BY THE CITY STAFF AND/OR THE CITY CONSULTANTS FOR THE ABOVE REFERENCED PROJECT.

THE LIST IS BY NO MEANS EXHAUSTIVE AND BIDDERS ARE ENCOURAGED TO SEARCH FOR OTHER AREAS OF POTENTIAL SUBCONTRACTING OPPORTUNITIES. THE BIDDERS EFFORTS IN THIS REGARD WILL ALSO BE A CONSIDERATION IN THE CITY'S REVIEW OF THE GOOD FAITH EFFORT.

IF THERE ARE NO IDENTIFIED AREAS OF POTENTIAL SUBCONTRACT OPPORTUNITIES FOR A PARTICULAR CONTRACT THEN THE BIDDER MUST MAKE A GOOD FAITH EFFORT TO IDENTIFY OTHER AREAS OF POTENTIAL SUBCONTRACT WORK.

THE REQUIREMENT TO MAKE A "GOOD FAITH EFFORT" APPLIES TO ALL CONTRACTS ESTIMATED BY THE CITY TO BE IN EXCESS OF $100,000. THE POLICY DOES NOT APPLY TO CONTRACTS BELOW $100,000.

THE CONTRACT GOAL FOR MBE/WBE/HUB/DBE PARTICIPATION IS 14%.

MBE/WBE/HUB/DBE Web Sites

North Carolina Department of Administration
www.doa.state.nc.us/hub

North Carolina Department of Transportation
www.ncdot.org

Bidders should furnish evidence as part of the post bid submittal that the above referenced web sites were used in attempting to contact MBE/WBE/HUB/DBE firms and as part of their good faith efforts.

REPORT OF PARTICIPATING SUBCONTRACTORS AND SUPPLIERS

Please supply data for all subcontractors and suppliers, whose services will be utilized on the project being bid upon by your firm. This document must be completed and submitted along with the bid proposal.

BIDDER'S NAME_____ PROJECT: _____

BID IS FOR: GENERAL CONSTRUCTION ( ); ELECTRICAL ( ); HVAC ( ); PLUMBING ( )
AMOUNT OF BID $_____ VALUE OF SUBCONTRACTS $_____

PERCENTAGE OF **CERTIFIED MBE/WBE/HUB/DBE** PARTICIPATION
_____%

CERTIFIED MBE/WBE/HUB/DBE SUBCONTACTORS AND SUPPLIERS:

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME:
_____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

PLEASE LIST BELOW ALL OTHER SUBCONTRACTORS AND SUPPLIERS AND NON-CERTIFIED MBE/WBE/HUB/DBE's.

PERCENTAGE OF OTHER SUBCONTRACTORS, SUPPLIERS AND NON-CERTIFIED MBE/WBE/HUB/DBE's _____%

OTHER SUBCONTRACTORS & SUPPLIERS AND NON-CERTIFIED MBE/WBE/HUB/DBE's:

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____
==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____
==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____
==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____
==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____
==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____
==========

NAME OF FIRM: _____ PHONE: _____
ADDRESS: _____ OWNER'S NAME: _____
_____ ( ) SUBCONTRACTOR ( ) SUPPLIER
WORK/SERVICE TO BE PERFORMED: _____
AMOUNT TO BE PAID $ _____ % OF TOTAL _____

COMPLETE AND SUBMIT ALONG WITH AFFIDAVIT C OR AFFIDAVIT D

In order for the City to determine the Good Faith Effort performed by the bidder, the bidder must list ALL firms contacted to perform subcontract work for the project.

SUBCONTRACT CONTACT SCHEDULE

PRIME CONTRACTOR: _____
PROJECT NAME: _____
DATE: _____

DATE CONTACTED	NAME & ADDRESS OF PERSON/BUSINESS CONTACTED	PHONE NUMBER	SERVICE PROVIDED	PERSON MAKING CONTACT	CERTIFIED MBE/WBE/HUB/DBE/WBE? YES/NO	RESPONSE	PRICE QUOTED

I HEREBY CERTIFY THAT THE SUBCONTRACTORS LISTED ABOVE WERE CONTACTED BY MY FIRM, AND REQUESTED TO SUBMIT QUOTES ON THE ABOVE REFERENCED PROJECT. ALL INTERESTED SUBCONTRACTORS WERE NEGOTIATED WITH IN GOOD FAITH.

I hereby certify that the above referenced information is true and accurate.
Inaccurate information provided in the bid document will be reported to the North Carolina Attorney Generals office and result in investigations and/or legal action against the bidder.

SIGNED: _____ TITLE: _____ COMPANY: _____

GENERAL PROVISIONS
Section G

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INSTRUCTION TO BIDDERS

SPECIAL NOTICE

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G-1.01 The name of a certain brand, make, manufacturer, or definite specification is to denote the quality standard of the article desired, but does not restrict bidders to the specific brand, make, manufacturer, or specification named; it is to set forth and convey to the prospective bidders the general style, type, character, and quality of the article desired.

G-1.02 The award of each contract will be made to the lowest responsible bidder as soon as practicable; provided, that in the selection of equipment or materials a contract may be awarded to a responsible bidder other than the lowest in the interest of standardization, or if ultimate economy is clearly evident.

If the project is being bid under the single and multiprime bidding methods, the CITY reserves the right to award the contract in whichever manner is in the best interest of the CITY taking into consideration the total cost of the project, including but not limited to contract administration and preparation costs.

The award of the contract represents a preliminary determination as to the qualifications of the bidder, the availability of funds for the project, and other matters precedent to the City's execution of the contract. No legally-binding acceptance of the offer set forth in the Contractor's bid occurs until the City executes the contract.

G-1.03 If any person contemplating submitting a bid for the proposed contract is in doubt as to the true meaning of any part of the plans, specifications, or other proposed contract documents, he may submit to the Engineer a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. An interpretation of the proposed documents will be made only by addendum duly issued, and a copy of such addendum will be mailed or delivered to each person receiving a set of such documents. The City of Wilmington will not be responsible for any other explanations or interpretations of the proposed documents.

GENERAL SPECIFICATIONS

G-1.04 SEALED PROPOSALS REQUIRED: INSTRUCTIONS: In accordance with the attached copy of advertisement and the following specifications, proposals will be received by the City Council of the City of Wilmington, North Carolina, at 929 N. Front Street 10th Floor, Purchasing Manager's Office, on the date and time designated in the Advertisement, when they will publicly open and read the proposals properly submitted for Municipal Improvements in the City of Wilmington, North Carolina. Firms submitting single and multiprime bids must enclose these in separate sealed, clearly marked envelopes.

If bids are requested for single and multiprime contracts, bids will be received, but not opened, for the separate prime contracts one (1) hours prior to the deadline for submission of single prime bids. All bids will be opened at the time for receipt of the single prime bids.

G-1.04.1 Proposals must be placed in a sealed envelope and addressed to The Purchasing Manager, City of Wilmington, North Carolina. The envelope shall show the name and address of the bidder and be plainly marked to show the project name and number and section (if applicable), as given in the Advertisement. The envelope must also be marked on the face to show the Contractor's North Carolina Contractor's License Number. Bid forms are contained in this bound copy of the Contract Documents, copies of the proposal pages may be submitted. All

information entered on proposal forms must be original and in ink. Submission of the entire document is not required. However, bidders are cautioned to submit all required forms, as referenced in the bound document, properly signed with the sealed bid. Bid forms will be filled in and completed in all respects as required herein.

Firms submitting bids for Single and Multi-Prime bids on the same project must submit each bid to the Purchasing Manager in a separate, properly identified sealed envelope.

Failure by the bidder to properly complete the Bid Proposal, Affidavit of Non-Collusion, MBE/WBE/HUB/DBE forms or other documents will be cause for declaring the bid non-responsive and cause for rejection.

G-1.04.2 Each proposal shall be accompanied by a cash deposit or certified check, said check to be payable to the City of Wilmington, and to be drawn on some bank or trust company insured by the Federal Deposit Insurance Corporation, in an amount equal to not less than five percent (5%) of the proposal. In lieu of making a cash or certified check deposit, as above provided, a bidder may file a bid bond executed by a corporate surety, licensed under the laws of the State of North Carolina to execute such bonds, said bid bond to be in an amount equal to not less than five percent (5%) of the amount of the bid, and said bid bond to be conditioned so that the surety will, upon demand, forthwith make payment to the City of Wilmington upon said bond if the bidder fails to execute the contract as provided below, and upon failure to forthwith make payment, the surety shall pay to the City an amount equal to the amount of said bid bond. Said deposit of cash, certified check, or bid bond to be forfeited to the City of Wilmington in the event of the bidder's failure to execute the contract within ten (10) days after award, as required by Section 143-129 of the General Statutes of North Carolina, Volume 3, as amended.

Deposits will be retained by the City, as property of the several bidders until the award of the contract is made, or all bids are rejected, after which the deposits will be returned.

G-1.04.3 No bid may be withdrawn for a period of ninety (90) days after being filed.

G-1.04.4 The work contemplated in these specifications, and the prices named in the proposals will be considered to include all cost of supplying, delivering, and all labor necessary for the incorporation of all materials into the work, and the use of all tools, machinery and equipment of every name and description that is used in carrying out the plans and specifications under this contract.

G-1.04.5 Bidders are cautioned to carefully examine the proposed location of work, as well as the plans and specifications, and to go over the whole project thoroughly with the Engineer before submitting their bids. It is understood and agreed that the quantities in the specifications, or as shown on the plans are approximate only, and no claim will be made against the City Council for any excess or deficiency, and no allowance will be made for the failure of the bidder to estimate correctly the difficulties attending the execution of the work.

G-1.04.6 Bidders are cautioned to adhere strictly to the spirit of the specifications in submitting their tenders, and it will be considered bad form to submit a proposal, expecting concessions after being awarded the contract by proposing the use of inferior materials and methods of construction for cheapening the work. The Engineer, Owner, or City desires to aid the Contractor in every legitimate way to carry on the work economically and expeditiously as set out in these specifications, and no alternate bids will be allowed unless requested in the proposal.

G-1.04.7 Where bids are received on Unit Prices, the City Council reserves the right, to authorize an increase of fifty percent (50%) of the amount of work set out in the proposal, or to decrease it to an extent equal to fifty percent (50%) of actual cost of the original work predicted on the unit prices given in the proposal. Such increase or decrease shall not vitiate or annul the

contract agreement hereinafter entered into. In the event of a discrepancy in the unit prices and the extended prices the unit prices shall prevail.

G-1.04.8 The bidder shall be required to produce substantial evidence that he is properly qualified to carry on the work as set out in the specifications. The qualifications required of all bidders are as follows: Thorough knowledge and experience in work of this character; labor and equipment in such quantities and quality as to enable the Contractor to carry on the work economically and expeditiously; financial condition must be such as not to require aid from the City Council, other than the regular monthly estimates.

G-1.04.9 The City Council will not consider any bid or award of contract to any person, firm, or corporation, who has defaulted in any obligation to the City of Wilmington, or who, in the opinion of the Council, failed to perform his work satisfactorily as to character or time.

G-1.04.10 The City reserves the right to reject any and all bids, or to accept the bid, or bids on the entire project, or any section of the project, as given in the Proposal, which, in its opinion, is to the best interest of the City.

G-1.04.11 The Contractor's attention is especially called to the fact that he will be requested by the Council, and will be expected to push this work with all speed possible.

G-1.05 CONTRACT SURETY OF PERFORMANCE BOND: Contractor shall furnish and deliver to the City a Payment Bond and a Performance Bond covering the faithful performance and completion of the work included in this Agreement and payment for all materials and labor furnished or supplied in connection with the work included in this Agreement. Said bonds shall be issued and furnished to the City prior to, and as a condition precedent to, commencement of the work of this Agreement. Each of the Payment Bond and Performance Bond shall be furnished on behalf of the Contractor, shall name the City of Wilmington obligee, and shall be in the amount of one hundred percent (100%) of the contract price. Such bond(s) shall be solely for the protection of the City. The Payment Bond and the Performance Bond shall be issued by a surety of financial standing having a rating from A.M. Best Company equal to or better than A and must be included on the approved list of sureties issued by the United States Department of Treasury. The surety bond must be in the form set forth in NCGS 44A-33, without any variations there from. The Contractor shall provide surety bond wherein Surety waives notice of any and all modifications, omissions, additions, changes and advance payments or deferred payments in or about the Contract, and agrees that the obligations undertaken by the Bond shall not be impaired in any manner by reason of any such modifications, omissions, additions, changes, and advance payments or deferred payments. The surety bond must set forth no requirement that suit be initiated prior to the time stipulated in applicable North Carolina Statutes of Limitation.

G-1.06 INSURANCE REQUIREMENTS: Before commencing any work, the Contractor shall procure insurance in the contractor’s name and maintain all insurance policies for the duration of the contract of the types and in the amounts listed in Section G-1.06. The insurance shall provide coverage against claims for injuries to persons or damages to property which may arise from operations or in connection with the performance of the work hereunder by the contractor, his agents, representatives, employees, or subcontractors, whether such operations by himself/herself or anyone directly or indirectly employed by him/her.

G-1.06.1 COMMERCIAL GENERAL LIABILITY: Contractor shall maintain Commercial General Liability (CGL) and if necessary, Commercial Umbrella Liability insurance with a total limit of not less than $5,000,000 each occurrence for bodily injury and property damage. If such CGL insurance contains a general aggregate limit, it shall apply separately to this project/location or the general aggregate shall be twice the required limit. CGL insurance shall be written on Insurance Services Office (ISO) “occurrence” form CG 00 01 covering Commercial General Liability or its equivalent and shall cover the liability arising from premises, operations,

independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

The City of Wilmington, its officers, officials, agents, and employees are to be covered as additional insureds under the CGL by endorsement CG 20 10 or CG 20 33 **AND** CG 20 37 or an endorsement providing equivalent coverage as respects to liability arising out of activities performed by or on behalf of the contractor; products and completed operations of the contractor; premises owned, leased or used by the contractor; and under the commercial umbrella, if any. The coverage shall contain no special limitations on the scope of protection afforded to the City of Wilmington, its officers, officials, agents, and employees.

There shall be no endorsement or modification of the CGL or Umbrella Liability limiting the scope of coverage for liability arising from explosion, collapse, underground property damage, or damage to the named insured's work, when those exposures exist.

The insurer shall agree to waive all rights of subrogation against the City of Wilmington, its officers, officials, agents and employees for losses arising from work performed by the contractor for the City of Wilmington.

G-1.06.2 WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY**:** Contractor shall maintain Workers' Compensation as required by the general statutes of the State of North Carolina and Employer's Liability Insurance. The Employer's Liability, and if necessary, Commercial Umbrella Liability insurance shall not be less than $5,000,000 each accident for bodily injury by accident, $5,000,000 each employee for bodily injury by disease, and $5,000,000 policy limit.

The insurer shall agree to waive all rights of subrogation against the City of Wilmington, its officers, officials, agents and employees for losses arising from work performed by the contractor for the City of Wilmington.

The U.S. Longshore and Harborworkers Compensation Act endorsement shall be attached to the policy when the services will be on or in close proximity to navigable waterways. The Maritime Coverage endorsement (WC 00 02 01) shall be attached to the policy when the contracted services involve the use of watercraft.

G-1.06.3 BUSINESS AUTO LIABILITY: Contractor shall maintain Business Auto Liability and, if necessary, Commercial Umbrella Liability insurance with a limit of not less than $5,000,000 each accident. Such insurance shall cover liability arising out of any auto, including owned, hired, and non-owned autos. Business Auto coverage shall be written on ISO form CA 00 01, or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in ISO form CA 00 01.

Pollution liability coverage equivalent to that provided under the ISO pollution liability-broadened coverage for covered autos endorsement (CA 99 48) shall be provided, and the Motor Carrier Act endorsement (MCS 90) shall be attached when those exposures exist.

Contractor waives all rights against the City of Wilmington, its officers, officials, agents and employees for recovery of damages to the extent these damages are covered by the business auto liability or commercial umbrella liability insurance obtained by Contractor pursuant to G-1.06.03 of this agreement.

The contractor's Business Auto Liability insurance shall be primary as respects the City of Wilmington, its officers, officials, agents, and employees. Any other insurance or self-insurance maintained by the City of Wilmington, its officers, officials, and employees shall be excess of and not contribute with the contractor's insurance.

G-1.06.4 OWNERS AND CONTRACTORS' PROTECTIVE LIABILITY INSURANCE: Contractor shall maintain Owners and Contractors Protective Liability (OCP) insurance on behalf of the City of Wilmington, as named insured, with each occurrence limit of $5,000,000.

G-1.06.5 BUILDERS RISK INSURANCE: DELETED

G1-1.06.6 INSTALLATION FLOATER:

1. Contractor shall purchase and maintain in force Installation Floater insurance for the installation of material. Such insurance shall be written in an amount equal to the replacement cost of the material. The insurance shall apply on a replacement cost basis.
2. Insured property shall include portions of the work located away from the site but intended for use at the site and shall also cover portions of the work in transit.
3. Installation Floater insurance shall name City of Wilmington as loss payee.
4. Installation Floater insurance shall, at a minimum, cover the perils insured under the ISO special causes of loss for (CP10 30).
5. Installation Floater insurance shall include coverage for flood. (Required is there is a flood exposure.)
6. Any deductible applicable to the Installation Floater shall be paid by the Contractor.
7. If the City of Wilmington is damaged by the failure of the Contractor to maintain Installation Floater insurance, then the Contractor shall bear all reasonable costs properly attributable to that failure.

G1-1.06.7 PROFESSIONAL LIABILITY INSURANCE: DELETED

G1-1.06.8 ENVIRONMENTAL PROFESSIONAL LIABILITY INSURANCE: DELETED

G1-1.06.9 BAILEE COVERAGE (INCLUDING TRANSIT): DELETED

G1-1.06.10 CONTRACTORS POLLUTION LIABILITY INSURANCE: DELETED

G1-1.06.11 PROTECTION & INDEMNITY: DELETED

G1-1.06.12 ABUSE/MOLESTATION COVERAGE: DELETED

G1-1.06.13 ACCIDENT INSURANCE: DELETED

G1-1.06.14 ELECTRONIC DATA LIABILITY INSURANCE: DELETED

G1-1.06.15 FIDELITY COVERAGE: DELETED

G1-1.06.16 GARAGE LIABILITY AND/OR COMMERCIAL GENERAL LIABILITY: DELETED

G1-1.06.17 GARAGEKEEPER'S LEGAL LIABILITY: DELETED

G1-1.06-18 ON-HOOK CARGO: DELETED

G1-1.06-19 NETWORK SECURITY AND PRIVACY LIABILITY: DELETED

G1-1.06-20 TECHNOLOGY ERRORS & OMISSIONS: DELETED

G1-1.06-21 RAILROAD PROTECTIVE LIABILITY INSURANCE: DELETED

G1-1.06.6 DEDUCTIBLES AND SELF-INSURED RETENTIONS: The contractor shall be solely responsible for the payment of all deductibles to which such policies are subject, whether or not the City is an insured under the policy.

G1-1.06.7 MISCELLANEOUS INSURANCE PROVISIONS: The policies are to contain, or be endorsed to contain, the following provisions:

1. Each insurance policy required by this contract shall be endorsed to state that coverage shall not canceled by either party except after 30 days prior written notice has been given to the City of Wilmington, PO Box 1810, Wilmington, NC 28402-1810.
2. If Contractor's liability policies do not contain the standard ISO separation of insureds provision, or a substantially similar clause, they shall be endorsed to provide cross-liability coverage.

G1-1.06.8 ACCEPTABILITY OF INSURERS: Insurance is to be placed with insurers licensed to do business in the State of North Carolina with an A.M. Best's rating of no less than A VII unless specific approval has been granted by the City.

G1-1.06.9 EVIDENCE OF INSURANCE: The Contractor shall furnish the City with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements prior to commencing the work, and thereafter upon renewal or replacement of each certified coverage until all operations under this contract are deemed complete. Evidence of additional insured status shall be noted on the certificate of insurance as per requirements in Section G1-1.06. This Certificate shall be in six (6) counterparts and, when the contract is signed by the Contractor, a copy thereof shall be inserted in each copy of the contract documents and upon insertion shall become a part of such documents.

With respect to insurance maintained after final payment in compliance with requirements, an additional certificate(s) evidencing such coverage shall be provided to the City with final application for payment and thereafter upon renewal or replacement of such insurance until the expiration of the period for which such insurance must be maintained.

G1-1.06.10 SUBCONTRACTORS: Contractor shall include all subcontractors as insureds under its policies or shall furnish separate certificates for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein. Commercial General Liability coverage shall include independent contractors' coverage, and the contractor shall be responsible for assuring that all subcontractors are properly insured.

G1-1.06.11 CONDITIONS:

1. The insurance required for this contract must be on forms acceptable to the City.
2. The contractor shall provide that the insurance contributing to satisfaction of insurance requirements in G1-1.06 shall not be canceled, terminated or modified by the contractor without prior written approval of the City.
3. The contractor shall promptly notify the Safety & Risk Manager at (910) 341-5864 of any accidents arising in the course of operations under the contract causing bodily injury or property damage.
4. The City reserves the right to obtain complete, certified copies of all required insurance policies, at any time.
5. Failure of the City to demand a certificate of insurance or other evidence of full compliance with these insurance requirements or failure of the City to identify a deficiency from evidence that is provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
6. By requiring insurance herein, the City does not represent that coverage and limits will necessarily be adequate to protect the Contractor and such coverage and limits shall not be

deemed as a limitation of Contractor's liability under the indemnities granted to the City of Wilmington in this contract.

7. The City shall have the right, but not the obligation of prohibiting Contractor or any subcontractor from entering the project site or withhold payment until such certificates or other evidence that insurance has been placed in complete compliance with these requirements is received and approved by the City.

G-1.07 DELETED

G-1.08 DELETED

G-1.09 DELETED

G-1.10 DELETED

G-1.11 PAYMENT OF EMPLOYEES: The Contractor, and each of his Sub-contractors, shall pay each of his employees, engaged in work on this project, in full (less deductions made mandatory by law) not less often than on the Contractor's regular pay days, which shall be normally each week.

G-1.12 PAYMENT: Payment by the City to the Contractor will be made under either one of the following procedures:

G1.12.1 Public Construction Contracts equal to or greater than one hundred thousand dollars ($100,000)

A. The City shall retain five percent (5%) of any periodic payment due a Contractor.

B. When the project is fifty percent (50%) complete, the City, with written consent of the surety, shall not retain any further retainage from periodic payments due the Contractor if the Contractor continues to perform satisfactorily and any nonconforming work identified in writing prior to that time by the Architect, Engineer, or City has been corrected by the Contractor and accepted by the City Engineer, Architect, Engineer, or Project Manager. If the City determines the Contractor's performance is unsatisfactory, the City may reinstate retainage for each subsequent periodic payment application up to the maximum amount of five percent (5%). The project shall be deemed fifty percent (50%) complete when the Contractor's gross project invoices, excluding the value of materials stored off-site, equal or exceed fifty percent (50%) of the value of the contract, except the value of materials stored on-site shall not exceed twenty percent (20%) of the contractor's gross project invoices for the purpose of determining whether the project is fifty percent (50%) complete.

C. 50% complete means:
   - Gross project invoices, excluding material stored off site, of the value of the contract
   - The value of materials stored on-site shall not exceed 20% of the gross project invoices

G-1.12.2 PAYMENT ON UNIT PRICE CONTRACTS: Not later than 30 work days after receipt of a City approved invoice the City will make partial payment to the Contractor, on the basis of a duly certified approved estimate by the City Engineer, Project Architect or City Project Manager of the work performed during the preceding calendar month by the Contractor, in accordance with item 12.1.1 above.

G-1.12.3 PAYMENT ON LUMP SUM CONTRACTS, THIRTY DAYS OR MORE IN DURATION: Not later than 30 work days after receipt of a City approved invoice and acceptance of work performed during that period, the City will make partial payment to the Contractor on the basis of a duly certified approved estimate by the City Engineer, Architect, Designer or Project Manager of the work performed during the preceding calendar month by the Contractor, and the value of the materials on the job, but not installed. The City will retain five percent (5%) of the amount of each such estimates in accordance with item 12.1.1 above. For purposes of preparing these monthly estimates, after the execution of the Contract, the Contractor will be required to submit to the City Engineer, Architect, Designer or Project Manager a breakdown of his lump sum bid in sufficient detail to permit an accurate determination of the progress of the work.

G-1.12.4 UNSATISFACTORY PERFORMANCE AND RETAINAGE: Retainage of the maximum of 5% may be reinstated if performance of the Contractor is unsatisfactory as determined by the City.

G-12.5 Within 60 days after the submission of a pay request and one of the following occurs, as specified in the contract documents, the owner with written consent of the surety shall release to the contractor all retainage on payments held by the owner: (i) the City receives a certificate of substantial completion from the Project Manager, Architect, Engineer, or Designer in charge of the project; or (ii) the owner receives beneficial occupancy or use of the project. However, the City may retain sufficient funds to secure completion of the project or corrections on any work. If the City retains funds, the amount retained shall not exceed two and one-half (2 ½) times the estimated value of the work to be completed or corrected. Any reduction in the amount of the retainage on payments shall be with the consent of the contractor's surety.

G1.12.6 Release of Retainage shall be in accordance with G.S. 143-134.1.

G1.12.7 There will be no retainage on periodic or final payments made by the City or prime contractor on public construction contracts in which the total project costs are less than one hundred thousand dollars ($100,000).

G-1.12.8 PAYMENT ON LUMP SUM CONTRACTS, THIRTY DAYS OR LESS IN DURATION: Where the time for completion of work, as stated in the proposal, is thirty (30) calendar days, or less, the City will make one payment in full upon completion of work and acceptance by the City Council. No partial or interim payments will be made.

G-12.9 The Prime contractor and all Subcontractors working on the project shall comply with G.S. 143-134.1in regards to payments to all subcontractors

G-12.9 Nothing in this section shall prevent the City from withholding payment to the contractor in addition to the amounts authorized under G.S. 143-134.1 for unsatisfactory job progress, defective construction not remedied, disputed work, or third-party claims filed against the owner or reasonable evidence that a third-party claim will be filed.

G1-12.10 Payment to Subcontractors by Prime Contractor or General Contractor

In accordance with N.C. Gen. Stat. § 22C, within seven days of receipt by the prime contractor of each periodic or final payment, the prime contractor shall pay the subcontractor based on work satisfactorily completed or service satisfactorily provided under the subcontract. Additionally, the Contractor shall pay the undisputed portions of subcontractors' invoices within one hundred five (105) calendar days of the date of subcontractor's invoice, independent of any payment by the

City to the Contractor. If the Contractor withholds any retainage pending final completion of any subcontractor's Work, the Contractor is required to pay the retainage so withheld within seven (7) calendar days after such subcontractor completes his Work satisfactorily, regardless of any payment of retainage by the City to the Contractor. The Contractor's failure to pay subcontractors as provided herein shall be a material breach for which the City may cancel the Contract.

If any periodic or final payment to the subcontractor is delayed by more than seven days after receipt of periodic or final payment by the prime contractor, the prime contractor shall pay the subcontractor interest, beginning on the eighth day, at the rate of one percent (1%) per month or fraction thereof on unpaid balance as may be due.

A subcontract on a contract governed by this section may include a provision for the retainage on periodic payments made by the prime contractor to the subcontractor. However, the percentage of the payment retained: (i) shall be paid to the subcontractor under the same terms and conditions as provided to the Prime Contractor and shall not exceed the percentage of retainage on payments made by the owner to the prime contractor. Subject to section G-1.12.4, any percentage of retainage on payments made by the prime contractor to the subcontractor that exceeds the percentage of retainage on payments made by the owner to the prime contractor shall be subject to interest to be paid by the prime contractor to the subcontractor at the rate of one percent (1%) per month or fraction thereof.

Nothing in this section shall prevent the prime contractor at the time of application and certification to the City from withholding application and certification to the City for payment to the subcontractor for unsatisfactory job progress; defective construction not remedied; disputed work; third party claims filed or reasonable evidence that claim will be filed; failure of subcontractor to make timely payments for labor, equipment, and materials; damage to prime contractor or another subcontractor; reasonable evidence that subcontract cannot be completed for the unpaid balance of the subcontract sum; or a reasonable amount for retainage not to exceed the initial percentage retained by the owner.

The Prime contractor shall comply in all respects with G.S. 143-134.1.in all manners in payments to any and all subcontractors.

Neither the City's nor contractor's release of retainage on payments as part of a payment in full on a line-item of work shall affect any applicable warranties on work done by the contractor or subcontractor, and the warranties shall not begin to run any earlier than either the owner's receipt of a certificate of substantial completion from the architect, engineer, or designer in charge of the project or the owner receives beneficial occupancy.

G-1.13 COMMENCEMENT AND COMPLETION OF WORK: The Contractor for the construction of improvements under this contract shall commence work under his contract within ten days after written notice by the City PURCHASING MANAGER, and shall fully complete all work thereunder within the time stated in the proposal form.

G-1.14 EXISTING CONDITIONS: The Contractor, in signing this contract, acknowledges that he has read these Specifications and is familiar with their terms; that he has studied the plans and drawings, which are entirely clear to him; that he has been over the ground where the work is to be done, and has fully acquainted himself with the existing conditions; that he is fully prepared to sustain all losses or damages incurred by the action of the elements, or from any unforeseen obstructions, or encumbrances that may be encountered in the prosecution of the work; is prepared to provide the necessary tools, appliances and machinery, skilled and unskilled labor and materials of all kind as specified, and to guarantee that on completion, all work will be in strict compliance with the plans and specifications.

G-1.15 SUBLETTING OR ASSIGNMENT OF CONTRACT: The Contractor shall keep the work under his own control, and shall not assign, by power of attorney, or otherwise, nor sublet the work or any part thereof, without the written consent of the City. The Contractor shall perform on the site and with his own organization work equivalent to at least thirty percent (30%) of the work to be performed under this Contract. If, during the progress of the work hereunder, the Contractor requests a reduction of such percentage, and the City Manager determines that it would be to the City's advantage, the percentage of the work required to be performed by the Contractor's own organization may be reduced; provided prior written approval of such reduction is obtained by the Contractor from the City Manager. The Contractor shall submit in writing the name of such Sub-contractor as he intends employing, the portion of the work which he is to do, the dollar amount of the work, indication as the MBE/WBE/HUB/DBE status of the subcontractor, his place of business, and such other information as the City may require, in order to know whether said Sub-contractor is reputable, reliable and able to properly perform the work he proposes to do and to determine the effort made by the bidder in securing MBE/WBE/HUB/DBE subcontractors. Also, with respect to each Sub-contractor, the Contractor shall either submit certification by his insurance carrier that such Sub-contractor is covered under the provisions of his policy, or submit a certificate from the Sub-contractor's insurer that the Sub-contractor is covered, in accordance with Paragraphs G-1.05 through G-1.10, inclusive.

The Contractor shall not, either legally or equitably, assign any of the monies payable under this Contract, or his claim thereto, except by consent of the City.

Written consent by the City to sublet or assign any portion of the contract shall not be construed to relieve the Contractor, or surety, of any responsibility for the fulfillment of the Contract.

INTENT OF SPECIFICATIONS

G-1.16 INTENT: The intent of these specifications is to provide for the work herein enumerated to be constructed of the best materials of their respective kinds, and perfectly suited to the work contemplated. The work to be fully completed in every detail for the purpose designed, and it is hereby understood that the Contractor, in accepting this contract, agrees to furnish skilled labor, and everything necessary to complete the work in a workmanlike and satisfactory manner.

G-1.17 CONTRACT: In order that the contractor may understand the scope of the work to be performed and the details of its construction, several documents have been prepared, and it is understood and agreed by and between the contracting parties that the following documents form, and are essential parts of the complete contract: Advertisement, Information for Bidders, General and Technical Specifications, Proposal, Specific Contract, Contractor's Bond, Drawings, Plans, Maps, MBE/WBE/HUB/DBE policy and Profiles, attached or herein described, and others that may be prepared from time to time governing and illustrating the work to be done under the terms of the contract, and all of which shall have the same weight as if embodied herein.

G-1.18 SPECIFICATIONS: The General Provisions of the Specifications give in detail the duties and obligations of the two parties to the contract, the procedure of the work, and manner in which payments are to be made under the contract. The Technical Specifications, following, give in more detail the characteristics and requirements of the several classes of materials and special instructions governing the methods of construction. Where there is conflict, the Technical Specifications shall always take precedence over the General Specifications.

DEFINITIONS

G-1.19 DEFINITIONS: Wherever in the Specifications, Proposal, Contract, or Bond the following terms, pronouns, or abbreviations used in their stead, occur, the intent and meaning shall be interpreted as follows:

A. N. S. I.
American National Standards Institute

A. S. T. M.
American Society for Testing and Materials

A. W. S.
American Welding Society

A. W. W. A.
American Water Works Association

A. A. S. H. T. O.
American Association of State Highway and Transportation Officials

Bid Bond
BID BOND: The security to be furnished by the bidder as guaranty of good faith to enter into a contract with the City for the proposed work, if such work is awarded to him.

Bidder
The person, or persons, partnership, firm or corporation submitting a proposal for the work contemplated.

Change Order
A written order from the Engineer signed by the Contractor and the City of Wilmington authorizing addition, deletion or revision in the work or an adjustment in the price or time for completion. All change orders must be approved by the City Manager and all change orders exceeding $5,000.00 must be approved by the Wilmington City Council.

City
The word City in these specifications refers to the City of Wilmington, North Carolina, the party of the second part to the contract, also referred to herein as the "Owner".

City Council or Council
The word Council, or City Council, refers to the City Council, the governing body of the City of Wilmington.

Contractor
The person, or persons, partnership, firm or corporation who enters into the contract awarded him by the City.

Drawings
All drawings, or reproductions thereof, pertaining to the construction of the work, which are approved by the Engineer for such purpose.

Engineer
The word Engineer, as used in these specifications, refers to the consulting engineer whose name appears on the drawings and/or to the City Engineer, and to his or their properly authorized assistants, limited to the duties entrusted to them.

Extra Work
A written order to the Contractor, signed by the Engineer, ordering a change in, or an addition to the work done, from that originally shown by the drawings and specifications.

An authorized Change order shall be issued for this work.

F. S.

Federal Specifications

General Specifications

All requirements and provisions contained in this document.

Performance Bond

The approved form of security executed by the Contractor and his surety, guaranteeing complete execution of the contract.

Bond Proposal

Written offer submitted by the bidder in the required manner to perform the work contemplated.

N. C. S. H. C. or N. C. H. C. Specifications

North Carolina State Highway Commission, Raleigh, North Carolina, and to their "Standard Specifications of Roads and Structures," latest edition.

Request for Contract Payment

The form supplied by the City and completed by the Contractor to request periodic payments on the contract. This form also includes a MBE/WBE/HUB/DBE payment form.

Special Provisions

Statements modifying or changing the requirements or provisions of the General Specifications, or adding new requirements or provisions thereto.

Specifications

The General Specifications, Special Provisions, and all written or printed agreements and instructions pertaining to the performance of the work, and to the quantity and quality of the materials to be furnished under the contract.

Standard Details

The Standard Detail drawings, or reproductions thereof, which pertain to the standard method of construction of the work, and which are approved by the Engineer.

Surety

The corporate body which is bound with and for the contractor, that is primarily liable with the contractor, for the acceptable performance of the contract and for the completion of the work.

Phrases

Wherever, in the specifications, or upon the drawings, the words "As required", "As permitted", or words of like import are used, it shall be understood that the direction, requirements, or permission of the Engineer is intended; and similarly the words "approved", "acceptable" and "satisfactory", or words of like import shall mean approved, acceptable, or satisfactory to the Engineer.

MBE/WBE/HUB/DBE POLICY

The policy adopted by City Council. A copy of the entire policy is available for inspection at the office of the Purchasing Manager.

G-1.20 INTERPRETATIONS AND CORRECTIONS: It is agreed by and between the contracting parties that the Engineer shall make all necessary explanations as to the meaning and intent of these specifications, and correct any errors, discrepancies or omissions that occur in the plans and specifications; it is further agreed that the Engineer shall, in all cases, determine the amount, quality, acceptability, and fitness of the several classes of work which are to be paid for under the contract; and it is also agreed that the Engineer shall act as referee upon all questions arising between the parties of this contract; and in all differences that occur between contractors working on adjoining sections concerning the work to be done under the terms of the contract, and the Engineer's decision shall be final and binding.

G-1.20.1 INTERPRETATIONS OF PLANS AND/OR SPECIFICATIONS PRIOR TO RECEIPT OF BIDS: If any prospective bidder feels that there are items within the plans or specifications, in the work proposed, or upon the site contemplated, which need clarification or interpretation, he shall, prior to the date and time for the receipt of bids, address a written statement to the Engineer, covering the points which he feels need clarification. It shall be the responsibility of the person addressing the inquiry to see that such a request is in the hands of the Engineer in sufficient time for proper consideration and answer. Upon receipt of such a written request, the Engineer will make a determination and if, in his opinion, interpretation, clarification and/or change should be made in the plans and/or specifications, he will inform each holder of the plans and specifications in writing of his decision or findings in the matter in question. No other procedure will be followed in interpretation or addendum to these specifications, and the City of Wilmington will not be responsible for any change unless made in accordance with this procedure.

Questions related to the proposed project, including questions concerning the plans and specifications will be addressed by the City or Engineer up to Seven (7) calendar days prior to the bid opening. No addenda will be issued after this time.

G-1.21 FIELD WORK: The Engineer shall give all necessary base lines and bench marks and information of like character for the guidance of the contractor, and all the work shall accurately conform thereto. Any work done without established lines, grades, may be ordered removed and replaced, without additional expense to the City.

G-1.22 INSPECTION: All materials and workmanship will be inspected by the Engineer, and the Contractor will be held to the spirit of the specifications at all times, the intent of such inspection being simply to obtain work of a high character, and one in which both parties to the contract can take pride.

G-1.23 ALTERATIONS: It is agreed by the contracting parties that the Engineer may at all times, before or after the commencement of the work, make alterations, or changes in the location, alignment, grades, materials and methods of construction that is desired, regardless of whether the location of such work be as shown on the plans upon which bids have been invited, and such change shall not vitiate or annul this contract, but the Engineer will determine the value of said work, and should such change diminish the amount of work to be done, no claim shall be made by the Contractor for damages on the grounds of anticipated profits from the part disposed with, but should the plan of a particular piece of work be altered or changed after commencement of said work and result in extra cost to the Contractor, the Engineer shall determine and certify a fair equitable value therefor, and his decision shall be final and binding.

G-1.24 INSPECTORS: Should it be found necessary, in the opinion of the Engineer, to appoint inspectors to pass upon the quality, amount, and general character of the work and the materials incorporated therein, such person, or persons, who, in the opinion of the Engineer, are deemed competent, may be appointed. The duties of this office are purely supervisory, and their decisions are subject to review by the Engineer.

EXTRA WORK

G-1.25 EXTRA WORK: The Contractor shall do any work not otherwise herein provided for when, and as ordered by the Engineer in writing by himself or specially authorized assistants. In the event that a mutually agreed price is not arrived at prior to the accomplishment of this extra work, the Contractor shall keep a strict account of the labor, equipment, and material used on said extra work, and shall give the Engineer an itemized statement each day of the amount. He shall further furnish the Engineer with bills, accounts and vouchers relating to the cost and access to all accounts concerning this work.

G-1.25.1 Request for reimbursement for Extra Work must be submitted by the Contractor within ten (10) days of the date upon which such extra work is accomplished, and subject request for reimbursement must bear on its face the authorizing number of the written order issued by the Engineer.

G-1.25.2 No request for reimbursement on account of additional work will be honored by the Engineer unless previously authorized by him in the manner stated.

G-1.26 PROTECTION: When such work is being carried on under the written instructions of the Engineer, and the work is damaged from whatever cause due to the carelessness or neglect of properly protecting it, or the use of improper materials, or inferior workmanship, such part thereof as the Engineer directs shall be removed and replaced by the Contractor at his own expense.

G-1.27 PAYMENT: For all such extra work, as authorized under the terms of Paragraph G-1.25, where it is possible for the Contractor and the Engineer to arrive at a mutually agreeable price (either lump sum or unit price) for this extra work in advance of the actual accomplishment of said work, this price may be used. In the event that this is not possible or practicable, the Contractor shall receive the reasonable cost of said work, plus ten percent (10%) of such cost. The decision of the Engineer shall be final upon all questions of the amount and value of extra work. The Engineer will include in such valuation the cost to the Contractor of all materials used, all labor, Social Security and insurance on labor only, common and skilled, labor foremen, and the fair rental of all machinery used for the period of such use. The Engineer will not include in this valuation any cost or rental of small tools, buildings, any portion of the time of the Contractor or superintendent, clerical help, overhead expenses or any allowance for the use of capital, these items being considered as covered by the ten percent (10%) added to the reasonable cost.

G-1.28 TIMEKEEPER: The Engineer shall have the right to appoint a timekeeper to represent the City on extra work, and the Contractor shall furnish him all necessary facilities for obtaining a correct record of the time and the materials incorporated in the work. The Engineer shall have the right to designate what force shall be employed, the compensation therefor and the foreman shall be approved by the Engineer.

GENERAL INSTRUCTIONS

G-1.29 OBSERVANCE OF THE LAW: In all operations connected with the work, the Contractor shall observe and obey all the precepts of the law, the ordinances and regulations of the Federal, City, County and State. The Contractor shall provide and maintain such barriers, signals, red lights, and watchmen to effectually prevent any accident in consequence of the work, and the Contractor shall be responsible and liable for all damage to life or property occasioned in any way by his acts or that of his agents.

G-1.30 DISPOSITION OF CLAIMS: In the event of injuries or damages to persons or property of any kind legally existing along, or adjacent to the work, the Contractor agrees to make repairs or payment for damages or injuries as may be necessary, and should the Contractor fail to promptly

repair or satisfy any legal complication that arises, after being notified in writing by the Engineer, the right is conferred upon the CITY to deduct the cost thereof from any money due, or to become due, the Contractor under the terms of the contract. All claims arising under this contract shall be settled to the satisfaction of the Engineer within sixty (60) days after notification to the Contractor of such claims, unless proceedings are entered into in a court of law.

G-1.31 PATENTS: Should the Contractor use any patented invention, article or contrivance in the construction or maintenance of the work, or any part thereof embraced in these specifications, the fee or royalty for the use of such patented article as aforesaid shall be included in the Contractor's proposal; and the Contractor agrees to hold the City harmless against any and all demands for such fees or royalties; and before final payment to the Contractor he shall furnish satisfactory evidence that all such claims have been settled.

G-1.32 PRIVATE PROPERTY: The Contractor shall not enter, or occupy with men, tools, machinery and materials, any property except that under the control of the City without the consent of the Engineer, and then only with written consent of the property owner. A copy of this written consent shall be given, or mailed to the Engineer.

G-1.33 LAYING OUT THE WORK: The Engineer will provide a base line for alignment purposes and a benchmark for vertical control. All construction offset stakes, forms, and batterboards shall be set by the contractor and are subject to review and approval by the Engineer, however, such approval of these items shall not relieve the Contractor of his responsibility to construct the work to the line and grade shown on the plans.

G-1.34 UNAUTHORIZED WORK: Any work done without lines, levels and instructions having been given by the Engineer, or without the supervision of an Inspector, will not be estimated or paid for, except when such work is authorized by the Engineer. Work so done, without the authority of the Engineer, may be ordered removed and replaced at the Contractor's cost.

G-1.35 RESPECT FOR FIELD RECORDS: The Contractor shall carefully preserve and maintain the proper position of all lines, stakes and grade boards until authorized to remove them. Any work that shows lack of alignment or grade where the Engineer's control stakes are missing, or the position of the points, stakes, or grades indicate that they have been carelessly maintained, such work shall be removed and replaced at the Contractor's expense. If, in the opinion of the Engineer, the Contractor does not utilize reasonable care in preserving control stakes, he shall be required to pay for all expenses involved in the replacement of these stakes.

G-1.36 INSPECTION OF MATERIALS: The Contractor shall furnish and deliver on the ground where it is to be used all materials suitable for the purpose intended. All materials and workmanship shall be subject to the Engineer's inspection, approval, or rejection at all times, and this inspection and approval during the progress of the work does not relieve the Contractor of repairs or renewal where the work has been damaged, proven defective, or overlooked, and on demand of the Engineer any work found not in conformity with the specifications shall be removed at once and replaced in accordance with the specifications.

G-1.37 WORKERS: Only competent and skilled workers of each class shall be employed on the work, and if the Engineer notifies the Contractor that any common or skilled workers, including those superintending the work, are unfaithful, disobedient, disorderly, or unsatisfactory, such worker, or workers shall be taken off of this project not again employed upon the work without the consent of the Engineer.

G-1.38 PROSECUTION OF WORK: The Contractor shall begin the work provided for under the terms of the contract within ten (10) days after written notice by the Purchasing Manager, and shall diligently prosecute and fully complete same within the time stated in his proposal. The Contractor shall prosecute the work in such manner, time and place as directed by the Engineer,

and he shall carry out without delay all orders and instructions given by the Engineer. During the absence of the Contractor, a qualified representative shall have authority to direct the work and to receive orders and instructions from the Engineer; but this direction by the Engineer for prosecuting the work shall not relieve the Contractor of any of the obligations or liabilities assumed under the contract.

G-1.39 SANITATION: Necessary sanitation conveniences for the use of workers employed upon the work shall be constructed and maintained by the Contractor, in strict accordance with the provisions of the City-County, and State Health Departments. The Contractor shall obey and enforce the aforesaid rules and regulations, including preventative measures where the workers have been exposed to infections and communicable diseases.

G-1.40 PUBLIC TRAFFIC: The Contractor shall maintain, in a safe and practical way, the roadways that are now used by the public or individuals that neither may be unnecessarily delayed nor inconvenienced on account of the work being carried on by the Contractor. The Contractor will be responsible for all injuries, damages to persons or property incurred by such person, or persons, firm or corporation on account of the acts or claims of negligence by the Contractor to the aforesaid while passing over the public or private roadways. The Contractor will be required to repair, or make reparation for any damages that he may have caused to the roadways, public or private, immediately after discontinuing traffic along such route, or when authorized to do so by the Engineer.

G-1.41 BARRICADES AND LIGHTS:

G-1.41.1 Travel upon streets or any intersecting alley, street, or private driveway shall not be inconvenienced needlessly, nor shall any street or alley be wholly obstructed for more than two blocks at any one time, except in special cases where a greater distance may be allowed by the Engineer.

G-1.41.2 Whenever a street is closed, the Contractor shall cause plainly worded signs, announcing such fact, to be placed with proper barricades at the nearest cross street upon each side of such obstruction, and upon intersecting streets.

G-1.41.3 The Contractor shall also maintain sufficient warning lights during the hours of darkness in and about the work which is under way, and it is his full responsibility to see that such lights are lit and kept lit from sunset to sunrise.

G-1.41.4 The Contractor shall also provide and maintain suitable detour signs so as to warn the public of work under way, and to guide them around the work in progress where it would be dangerous for them to proceed through the working area.

G-1.41.5 If required by the Engineer, the Contractor shall also provide watchmen, or signalmen for protection and guidance of the public.

G-1.41.6 All barricades, lights, signage, flagging, and signalmen shall be established and operate in accordance with City requirements and North Carolina Department of Transportation.

G-1.42 DRAINAGE: The Contractor shall maintain an unobstructed flow of the natural and artificial drains at all times, and in the event it is necessary during the prosecution of work to obstruct the free flow of either, the Contractor shall provide for flow of water in such manner that no damage shall result, or a nuisance be created.

G-1.43 CLEANING UP: On the completion of any part of the work, the Contractor shall remove all surplus earth, materials of construction, debris, and refuse from the work as directed by the

Engineer. On the final completion of the work, all debris over the entire contract, which is a result of work by the Contractor, shall be moved or destroyed as directed by the Engineer.

G-1.44 INCIDENTAL WORK: The duties of the Contractor have been set out in these specifications in a broad manner, with the intent of bringing to the attention of the Contractor his responsibilities under the contract, and any details of the work not specifically mentioned, but obviously necessary for carrying on, and the completion of the work shall be considered incidental thereto, and as being a part of, and included with the work for which prices have been named in the proposal, and the Contractor will not be entitled to any additional compensation therefor.

G-1.45 CONTRACTOR'S CLAIM FOR DAMAGES: In the event the Contractor is of the opinion that he should be compensated for damages sustained by reason of some act of the City, its agents or employees, the amount of such claims shall be itemized and a detailed report shall be furnished the Engineer by the Contractor within ten (10) days after the date it is claimed such damages were sustained. If the Contractor fails to file his claim in the manner and within the time named, but presents such claim at a later date when it would be impossible to make a thorough investigation, such claims will be forfeited and invalidated, and payment of the alleged damages will be disallowed.

G-1.46 EXTENSION OF TIME: No extension of time will be made the Contractor for completing the work on account of ordinary and usual delays, such as the condition of the weather, and lack of material, accidents, and the occurrence of such will not relieve the Contractor from the necessity of maintaining the rate of progress agreed upon. The City will have the right, upon the recommendation of the Engineer after investigation, to extend the time for completion when extraordinary delays or accidents of unusual nature are incurred over which the Contractor has no possible control; but such action on the part of the City shall not operate or be construed to waive any of the rights of the City under this Contract and the Performance Bond. In the event the Contractor fails to complete the work in the specified time named in the proposal, and is permitted to continue and complete the work as if such time had not lapsed, such permission shall not be deemed a waiver in any respect by the City of any liability for extra expense thereby incurred arising from the noncompletion of said work, within the specified time, but such liability shall remain in full force against the Contractor.

G-1.47 TIME FOR COMPLETION AND LIQUIDATED DAMAGES: It is hereby understood and mutually agreed, by and between the Contractor and the City, that the date of beginning and the time for completion as specified in the contract of work to be done hereunder are ESSENTIAL CONDITIONS of this contract.

The beginning date of the construction period shall be ten (10) days following the date on the NOTICE TO PROCEED letter duly mailed by the Purchasing Manager to the contractors address indicated in the bid documents.

The Contractor agrees that said work shall be prosecuted regularly, diligently, and uninterruptedly at such rate of progress as will ensure full completion thereof within the time specified. It is expressly understood and agreed, by and between the Contractor and the City, that the time for the completion of the work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

If the said Contractor shall neglect, fail or refuse to complete the work within the time herein specified, or any proper extension thereof granted by the City, then the Contractor does hereby agree, as a part consideration for the awarding of this contract, to pay to the City the amount specified in the contract, not as a penalty but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day that the Contractor shall be in default after the time stipulated in the contract for completing the work.

The said amount is fixed and agreed upon by and between the Contractor and the City because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the City would in such event sustain, and said amount is agreed to be the amount of damages which the City would sustain and said amount shall be retained from time to time by the City from current periodical estimates.

It is further agreed that time is of the essence of each and every portion of this contract and of the specification wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the contract an additional time is allowed for the completion of any work, the new time limit fixed by such extension shall be to the essence of this contract. Provided, that the Contractor shall not be charged with liquidated damages or any excess cost when the City determines that the Contractor is without fault and the Contractor's reasons for the time extension are acceptable to the City; Provided further, that the Contractor shall not be charged with liquidated damages or any excess cost when the delay in completion of the work is due to any preference, priority or allocation order duly issued by the City.

G-1.48 SALVAGED MATERIALS: Any used materials removed from the site of the construction, such as granite curb, manhole and catch basin castings, pipe, fill materials, which materials will not be re-used under this contract, are the property of the City of Wilmington. Pipe, curb, castings, etc., shall be carefully removed by the Contractor and delivered to the City Lot at Tenth and Fanning Streets, where a receipt will be given. Excess fill material will be dumped on disposal areas indicated by the Engineer. The Contractor will be charged with any salvaged materials which he cannot account for as having delivered, as specified.

G-1.49 FINAL ESTIMATE: The Engineer shall certify to the City in writing when, in his opinion, the Contractor has performed all that is set out in the contract and the specifications relative to the construction, and the Engineer shall show in such certificate the amount of work done from actual measurement, and the value of such work under and according to the prices named in the proposal. The City, on acceptance of said certificate, shall pay unto the Contractor within thirty (30) days thereafter the amount remaining due, and that part of the estimate remaining unpaid and including all moneys retained in the monthly estimates and for other causes under the contract.

The acceptance by the Contractor of the final payment shall release the City of any and all claims, liabilities and obligations to the Contractor for any and all work done and materials furnished, or for any act of the City or its agents or employees affecting the same. Before final payment is made, the Contractor shall submit an affidavit to the Engineer, stating that he has fully paid all bills for equipment, materials, or labor used on this project.

G-1.50 INSPECTION AND TESTING MATERIALS: Whenever in these contract documents, inspection and testing of materials is called for, the selection of bureaus, laboratories and/or agencies for such inspection and testing is subject to the approval of the Engineer.

G-1.50.1 Documentary evidence satisfactory to the Engineer that the materials have passed the required inspection and testing must be furnished to the City by the Contractor prior to the incorporation of such materials in the work, when required by the Engineer, and rejected materials must be promptly removed from the premises.

G-1.50.2 Wherever an outside testing laboratory is employed for testing of materials to be incorporated in this contract, the City of Wilmington shall employ and pay said laboratory for services rendered.

G-1.51 CONTRACTOR'S USE OF PUBLIC WATER: The Contractor shall comply with all requirements of the Cape Fear Public Utility Authority for use of public water.

G-1.52 PRECAUTIONS PRIOR TO AND DURING EXCAVATION OF ANY STREETS: No excavation, tree removal or clearing shall be begun by the Contractor upon any street within the City, or any area upon which work is to be done under this contract until he has notified and arranged for an authorized representative of the utility companies and departments which maintain underground systems within the City of Wilmington (water, sewer, electric, telephone and gas) to go over all areas to be graded, excavated or cleared, and designate the location of all hidden or underground facilities, lines, cables, pipes, or other structures and adequately mark these for proper protection during the progress of the proposed construction. The City will use its best offices to require that the owners of utilities which are in physical interference with the work relocate their utilities with utmost speed when these obstructions are encountered. In case any obstruction so located or placed as to interfere with the work, is unexpectedly encountered, the Contractor shall at once notify the Engineer of the locality and circumstances, and the place shall be passed over until satisfactory arrangements can be made. The Contractor shall make no claim against the City for damages arising out of such a delay.

G-1.52.1 Any utility which requires relocation due to physical interference with the proposed construction will be required to be relocated by the owners by the City under its franchise agreement with the operators of said utility.

G-1.52.2 Any utility line which, in the opinion of the Engineer, does not require relocation due to physical interference with the proposed project shall be the responsibility of the Contractor to protect during the progress of the work. In the event of damage to any such line upon which a repair cost is claimed, this claim shall be paid by the Contractor. Where the utility owner has given incorrect or insufficient information to the Contractor as to the location of its underground lines, then the Contractor shall be relieved of the costs of repair, which shall then be borne by the utility company or operating department.

G-1.52.3 Under no circumstances, however, shall machine excavation, grading or cut of any nature be made in a street, or areas where high voltage underground cable or gas distribution lines, services, or mains are situated without the continuous presence of an authorized representative of the owning utility who is capable of "shutting down", "cutting off", discontinuing, or taking such other action as may be necessary to prevent a dangerous condition or occurrence of said utility lines, cables or facilities are damaged during such operations.

G-1.52.4 Should the location or position of any underground or surface obstruction be such that in the opinion of the Engineer its removal, replacement, realignment, or change is required for the prosecution of the work, and it shall be deemed desirable or expedient by the Engineer, the Contractor shall perform such work as may be required as Extra Work under this Contract. (See G-1.25, G-1.26, G-1.27, and G1.28).

G-1.53 RIGHTS-OF-WAY: The City shall furnish all needed rights-of-way for the project, but in the event that any certain rights-of-way and grounds necessary for the purpose of this Contract be not acquired by the City until after the beginning of the work, the Contractor shall so arrange the procedure of work as to allow time for the acquisition of such rights-of-way, and the City will not reimburse, or be liable to the Contractor for any losses resulting from, or incident to, such delay. As soon as the rights-of-way in question have been acquired, the Contractor shall at once proceed with the work thereon with such forces as will insure its prompt completion, but if there is such delay in procuring the right-of-way in question that there will not remain a reasonable length of time before the date set for the completion of this particular work, this fact shall operate so as to extend the time for completion of the particular work affected and to compensate for the actual time lost.

G-1.54 USE OF A PORTION OF THE WORK: Whenever, in the opinion of the Engineer, any portion of the work is completed, or is in an acceptable condition for use, it shall be used for the purpose intended. Such use shall not be held in any way as an acceptance of that portion of the work

used, or as a waiver of any of the provisions of these specifications. Necessary repairs or renewals in any section of the work due to defective materials, defective workmanship, or natural causes, under the instructions of the Engineer shall be performed by the Contractor at no additional cost to the City.

G-1.55 EXCISE TAX ON MATERIALS OR FEDERAL TRANSPORTATION TAX, EXEMPTION THEREON: Wherever existing Federal Laws concerning Federal Excise Taxes and Federal Transportation Tax provide that the City of Wilmington is exempt from payment of such tax on items purchased by it, and these laws and regulations permit the extension of this exemption to the Contractors performing work for the City, the City will supply affidavits as to the existence and nature of the Contract, as requested by the Contractor for his use in filing with his vendors and transportation agencies to make his purchases for work under this Contract exempt from such taxes; providing (1) that the Contractor shall have filed an affidavit with the City that his bid on this contract does not include any costs of said taxes, and (2) that the materials for which he will request exemption from tax will be only those materials, which upon completion of the Contract will have actually been incorporated into the work under this Contract, and upon receipt of final payment by the Contractor will become the property of the City of Wilmington.

G-1.56 REQUIRED RECORDS ON SALES AND USE TAX: In order that the City may substantiate a refund claim for sales and use taxes, the Contractor shall furnish the City certified statements in triplicate, setting forth the cost of building materials, supplies and fixtures, and equipment which become a part of, or are annexed to any building or structure being erected, altered, or repaired under contract with the City and the amount of sales and/or use taxes paid thereon.

In the event the Contractor makes several purchases from the same vendor, such certified statement must indicate the invoice numbers, the inclusive dates of the invoices, the total amount of the invoices and the sales and use taxes paid thereon. Such statement must also include the cost of any tangible personal property withdrawn from the Contractor's warehouse stock which is incorporated in the work, and the amount of sales and use tax paid thereon by the Contractor. The Contractor shall also obtain similar certified statements by his Sub-contractors and submit them to the City.

Bidders are reminded that an additional Two percent (2%) North Carolina Sales Tax is now collected on all sales made within certain counties. Purchases within these counties will require separate certified statements for this 2% tax. This statement shall give the vendors name, invoice number, total amount of invoice, date of invoice, the amount of the special 2% tax paid and the County in which the purchase was made. In the event that the Contractor wishes to file a combined certified statement showing the 4% tax and the 2% tax separately, this will be acceptable provided he gives the counties in which the 2% tax was paid.

This certified statement must be submitted to the City Engineer <u>monthly</u>, and all certified statements shall be submitted before final payment is made for work performed under this contract.

G-1.57 SURFACE AND SUB-SURFACE STRUCTURES: The Contractor shall be held responsible for the proper replacement of all bridges, crossings, or like structures.

In case any pipe or other obstruction, located or placed so as to interfere with the work is unexpectedly encountered, the Contractor shall at once notify the Engineer of the locality and circumstances, and the place shall be passed over until satisfactory arrangement can be made, without any claim for damages arising from such delay.

Should the location or position of any underground or surface obstruction be such that, in the opinion of the Engineer it must be relocated, and he deems it desirable or expedient that the Contractor undertake the necessary work, the Contractor will undertake to accomplish such work

as directed by the Engineer, as provided under the sections of these Specifications dealing with Extra Work.

The Contractor is to take all risks and shall be responsible for all expenses and damage attending the presence or proximity of any gas or water pipe, or public or private sewers or drains, conduits, or other structures located in such a manner as shall not, in the opinion of the Engineer, require shifting, accommodating, or removing.

G-1.58 SETTLEMENT OVER EXCAVATION: The Contractor shall be entirely responsible for all settlement over any and all trenches and excavations which may have been cut along the line of his work at any time prior to the completion of his contract, and for a period of twelve (12) months after completion of his contract.

G-1.59 TEMPORARY SUSPENSION OF WORK: The Engineer shall have the authority to suspend the work, wholly or in part, for such period or periods as may be deemed necessary due to unsuitable weather, or other such conditions as are considered unfavorable for the suitable prosecution of the work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given, or perform any or all provisions of the Contract. If it should be necessary to stop work for an indefinite period, the Contractor shall store all materials necessary in such a manner that they will not deteriorate or become damaged in any way, and he shall take every precaution necessary to prevent damage or deterioration of the work performed, provide suitable drainage by opening ditches, shoulder drains, etc., and erect structures where necessary. The Contractor shall not suspend the work without authority from the Engineer. Neither the failure of the Engineer to notify the Contractor to suspend the work on account of bad weather, nor permission from the Engineer to continue work during bad weather shall be cause for the acceptance of any work which does not comply in every respect with the Contract and Specifications.

G-1.60 EQUAL OPPORTUNITY REQUIREMENTS: The Contractor agrees that it will in carrying out the terms of this agreement, comply with the provisions of Executive Order 11246 entitled "Equal Employment Opportunity".

In complying with the provisions of Executive Order 11246, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(c) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or worker representatives of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the Department of Housing and Urban Development and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.

(f) In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 or September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor.

(h) EXEMPTIONS TO EQUAL OPPORTUNITY CLAUSE: (1) Contracts and sub-contracts not exceeding $10,000.00 (other than Government bills of lading) are exempt. The amount of the contract, rather than the amount of the Federal Financial Assistance shall govern in determining the applicability of this exemption. (2) Except in the case of sub-contractors for the performance of construction work at the site of construction, the clause shall not be required to be inserted in sub-contracts below the second tier. (3) Contracts and sub-contracts not exceeding $100,000.00 for standard commercial supplies or raw materials are exempt.

G-1.61 SAFETY: The contractor and each of his subcontractors shall comply at all times with all regulations of the Occupational Safety and Health Administration and all labor laws and regulations of the State of North Carolina applicable to safety. Such standards include 29 CFR Part 1926 and applicable standards from 29 CFR Part 1910 of the Code of Federal Regulations.

The contractor and each of his subcontractors shall maintain adequate protection against damage to life and property during the work and shall provide and maintain all necessary protective devices until completion and acceptance of the work by the City.

In any emergency threatening life or property not considered by the contractor as coming under the provisions provided in this Section G-1.61 the contractor may act at his own discretion to prevent or alleviate the threatening situation without authorization by the City.

G-1.62 Contractor shall obtain building, electrical, mechanical and plumbing permits for all work under the Contract. <u>There will be no fee for obtaining these permits</u>.

G-1.63 GENERAL CONTRACTOR: In the event the bid and subsequent contract require separate prime contractors for the various phases of the work, the Contractor receiving the GENERAL CONSTRUCTION contract shall act as the General Contractor for the project in regards to scheduling of the work and other duties generally carried out by the General Contractor.

G-1.64 PLANS AND SPECIFICATIONS: All firms receiving award on a section of the contract shall receive free of charge from the City of Wilmington two (2) complete sets of plans and

specifications for the project. For Single prime contracts involving multiple subcontractors, the primary subcontractors (HVAC, Plumbing, and Electrical or specialty item specifically bid as a separate item) shall receive up to two (2) complete sets of plans and specifications. Any further sets required by the contractor shall be charged to the contractor at the cost of reproduction.

G-1.65 DISPUTES: Any disputes in excess of $15,000 shall be processed in accordance with Section 13 of the contract.

Rev. 2/02

STATE OF NORTH CAROLINA CONTRACT NO: GLT-ST-0925

NEW HANOVER COUNTY

CONTRACT FOR CONSTRUCTION SERVICES

THIS CONTRACT, made and entered into on the date executed by all parties, by and between the CITY OF WILMINGTON, NORTH CAROLINA, a Municipal Corporation located in New Hanover County (hereinafter called "CITY"); and 1. a corporation organized under the laws of the State of _____; 2. a non-profit corporation organized under the laws of the State of _____; 3. an unincorporated association having its principal place of business in _____; 4. a resident of _____; or 5. owner of a partnership organized under the laws of the State of _____, with its principal offices in _____ (hereinafter called "CONTRACTOR").

W I T N E S S E T H:

1. Purpose

The CITY hereby employs the CONTRACTOR to furnish all labor, materials and equipment to perform all work in manner and form as specified by the attached plans, specifications and documents consisting of, but not limited to: Advertisement, Instructions to Bidders, General Conditions, Technical Specifications, Proposal and Affidavit, Contract and Performance and Payment Bonds, which are incorporated as if fully set out, for the following:

GREENVILLE LOOP TRAIL SECTION 3- GREENVILLE LOOP SIDEWALK as specified herein and, on the plans, specifications, contract documents, drawings, addenda and change orders (if any).

2. Term of Contract/Liquidated Damages

The CONTRACTOR shall commence the work to be performed under this contract within ten (10) days of receipt of a written order from the Purchasing Manager and shall complete all work hereunder within **250** calendar days of the date of beginning. The CONTRACTOR further agrees to pay, as liquidated damages, (**SEE PROJECT SPECIAL PROVISIONS)** for each consecutive calendar day thereafter as hereinafter provided in Paragraph G-1.47 of the General Conditions.

3. Extra Work

In the event extra work is necessary, not set forth or contemplated in this contract, the CONTRACTOR agrees to faithfully perform all such work under a written change order from the CITY, setting forth and describing fully the work to be done. The CITY hereby agrees to pay to the CONTRACTOR, for any such extra work, upon presentation of properly prepared, itemized statements of cost computed as follows:

(a) The CONTRACTOR shall be allowed to charge for labor used at the actual payroll charges during the time actually spent on extra work, (b) He shall be allowed to add on labor charges the percentage shown in Paragraph 8 of the Proposal for Workmen's Compensation Insurance, Social Security and other payroll charges, (c) The rate for such equipment, this hourly rate to be for operating hours only, (d) The CONTRACTOR shall be allowed to charge for material purchased by him and used on extra work orders the amount charged to him by the vendor upon presentation of paid invoices, (e) The CONTRACTOR shall be allowed to add to the costs of said work arrived at enumerated above ten (10%) percent of materials, cost of equipment and actual payroll cost for overhead and profit.

4. Payment

4.1 The CITY agrees to pay to the CONTRACTOR for the faithful performance of this contract, subject to any additions or deductions as provided for in the Specifications or Proposal, and in accordance with the prices as set forth, subject to any additions which may be due under Paragraph 3 of this Agreement, Unit Prices and/or lump sum price, as set forth in the Proposal, the estimated total cost of _____ ($_____)

4.2 Not later than 30 work days after receipt of a City approved invoice the City will make partial payment to the Contractor on the basis of a duly certified approved estimate by the City Engineer of the work performed during the preceding calendar month by the Contractor, and the value of the materials on the job, but not installed, less ten (5%) percent of the amount of such estimate, which is to be retained by the CITY until all work has been performed strictly in accordance with this contract and until such work is accepted by the CITY.

4.3 Invoices, or estimates or the cost of work performed, through June 30th, must be received by the 10th calendar day of July.

4.4 Upon submission by the CONTRACTOR of evidence satisfactory to the CITY that all payrolls, materials, bills and any other liabilities or costs incurred by the CONTRACTOR in connection with the construction of this work has been paid in full, final payment on account of this contract shall be made within thirty (30) days after completion by the CONTRACTOR of all work covered by this agreement and the acceptance of such work by the CITY.

5. Performance Bond

It is agreed that if, at any time after the execution of this contract and the surety bond attached for its faithful performance, the CITY shall deem the surety or sureties upon such bond to be unsatisfactory, or if for any reason such bond ceases to be adequate to cover the performance of the work, the CONTRACTOR shall, at his expense, within five days after receipt of notice from the CITY to do so, furnish an additional bond or bonds in such form and amount, and with such surety, or sureties, as shall be satisfactory to the CITY.

6. Insurance; Proof of Coverage

The CONTRACTOR shall take out and maintain, during the life of this contract, all insurance required under Paragraph G-1.06 of the General Provisions, and shall, at execution of this contract, attach to each of the counterparts thereof documentary proof of compliance in the form of a Certificate from his insurer, stating the amount, policy numbers, and kinds of insurance carried. This certificate shall also contain a statement by the insurer that he will notify the City of

Wilmington by Registered Mail twenty (20) days prior to any cancellation or lapse of the insurance shown on this certificate. It is further agreed that the CONTRACTOR shall furnish the CITY with one memorandum copy of the policy, or policies, shown on this certificate at the time of the signing of this contract.

7. Guarantee

The CONTRACTOR hereby agrees to guarantee, for a period of one year after date of final payment, the work accomplished under this Contract. The CONTRACTOR agrees to repair at no cost to the CITY any defects due to faulty workmanship or materials which may appear in his work during this period.

8. Release and Indemnity

To the fullest extent permitted by law, the CONTRACTOR shall release, indemnify, keep and save harmless the CITY, its agents, officials and employees, from any and all responsibility or liability for any and all damage or injury of any kind or nature whatever (including death resulting therefrom) to all persons, whether agents, officials or employees of the CITY or third persons, and to all property proximately caused by, incident to, resulting from, arising out of, or occurring in connection with, directly or indirectly, the performance or nonperformance by CONTRACTOR (or by any person acting for the CONTRACTOR or for whom the CONTRACTOR is or is alleged to be in any way responsible), whether such claim may be based in whole or in part upon contract, tort (including alleged active or passive negligence or participation in the wrong), or upon any alleged breach of any duty or obligation on the part of the CONTRACTOR, its agents, officials and employees or otherwise. The provisions of this Section shall include any claims for equitable relief or for damages (compensatory or punitive) against the CITY, its agents, officials, and employees including alleged injury to the business of any claimant and shall include any and all losses, damages, injuries, settlements, judgments, decrees, awards, fines, penalties, claims, costs and expenses. Expenses as used herein shall include without limitation the costs incurred by the CITY, its agents, officials and employees, in connection with investigating any claim or defending any action, and shall also include reasonable attorneys' fees by reason of the assertion of any such claim against the CITY, its agents, officials or employees. The CONTRACTOR expressly understands and agrees that any performance bond or insurance protection required by this agreement, or otherwise provided by the CONTRACTOR, shall in no way limit the CONTRACTOR'S responsibility to release, indemnify, keep and save harmless and defend the CITY as herein provided. The intention of the parties is to apply and construe broadly in favor of the CITY the foregoing provisions subject to the limitations, if any, set forth in N.C.G.S. 22B-1.

9. Personnel

It is mutually agreed that CONTRACTOR is an independent contractor and not an agent of the CITY, and as such the CONTRACTOR shall not be entitled to any CITY employment benefits, such as, but not limited to, vacation, sick leave, insurance, workmen's compensation, or pension and retirement benefits.

10. Conflict of Interest

No paid employee of the CITY shall have a personal or financial interest, direct or indirect, as a contracting party or otherwise, in the performance of this agreement.

11. Non-Waiver of Rights

It is agreed that the CITY'S failure to insist upon the strict performance of any provision of this agreement, or to exercise any right based upon a breach thereof, or the acceptance of any performance during such breach, shall not constitute a waiver of any rights under this agreement.

12. Suspension or Termination of Agreement

12.1 In the event that review of Contractor's performance shows non-conformance to the attached scope of service or other terms or conditions contained herein as a result of the Contractor's errors, omissions or negligent acts, the contractor shall be in breach of this Agreement and the City may take corrective action as it deems necessary including, but not limited to, withholding or reduction of payment.

12.2 The City shall also have the right to suspend this Agreement upon written notice to the Contractor. Such suspension may be made for any of the following reasons: (a) violations or non-compliance with the contract terms, (b) violations of OSHA laws or regulations, (c) violations of Federal or State environmental and health laws or regulations, (d) operating City valves without permission, (e) moving City supplied water meters without permission, (f) failure to adequately plan for the protection of underground utilities during construction, (g) violation of any City ordinances or regulations or (h) verbal abuse of any City employees or others. In addition, any such violations may result in the Contractor being disqualified from bidding on future City projects. The written notice of suspension shall state the reasons for suspension and allow for a review period of ten (10) days during which the Contractor shall be provided with an opportunity to respond with an explanation or a justification, and/or shall undertake any reasonable remedial action required by the City. If, in the opinion of the City, the Contractor has not addressed the reasons for suspension at the completion of the ten (10) day suspension period, the City shall have a right to terminate this Agreement whereupon all obligations of the City to the Contractor shall cease.

12.3 The City may, at any time, terminate this contract for the City's convenience and without cause. Upon receipt of written notice from the City of such termination for the City's convenience, the Contractor shall (a) cease operations as directed by the City in the notice; (b) take actions necessary, or that the City may direct, for the protection and preservation of the work; and (c) except for work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing sub- contracts and purchase orders and enter into no further sub-contracts and purchase orders. In the event that this project is terminated for the convenience of the City, the Contractor shall be paid for services performed to the date of termination and costs incurred by reason of such termination, but such costs shall not include anticipated profit on unperformed work. (In no event will the amount due contractor in the event of termination for convenience exceed that amount set forth in Paragraph 4.1 of this Agreement. Contractor shall be paid for all reimbursables, as defined herein, which are due him.)

12.4 If after notice of termination of this contract under the provisions of Paragraph 12.2, it is determined for any reason that the Contractor was not in default under the provisions of such paragraph, or that the default was excusable under the provisions of this contract, the rights and obligations of the parties shall be the same as if the notice of termination had been issued by the City for convenience as set forth in Paragraph 12.3.

12.5 Nothing contained herein shall prevent the City from pursuing any other remedy which it may have against the Contractor including claims for damages.

13. Contract Disputes

In accordance with G.S. 143-128.1(8) the parties agree to mediate contract disputes in excess of $15,000.00. Within ten (10) days of such contract disputes, the parties shall select a mediator

that is certified pursuant to all of the parties involved in the dispute. If the parties cannot agree on a mediator or do not timely select a mediator, the City shall select the mediator. The parties and the mediator shall agree upon the mediator's rate of compensation. The parties to the dispute shall share in the payment of the mediator's compensation with the City paying a minimum of one-third of the compensation if the City is a party to the dispute.

14. Assignment of Agreement

It is mutually agreed by the parties hereto that this agreement is not transferable by either party to this agreement without the consent of the other party to this agreement.

15. Subcontracts

The CONTRACTOR shall utilize no subcontracts for carrying out the services to be performed under this agreement without the written approval of the CITY.

16. Entire Agreement

The agreement constitutes the entire understanding of the parties.

17. Binding Effect

The agreement shall be binding upon the heirs, successors, assigns, agents, officials, employees, independent contractors, and subcontractors of the parties.

18. Continuing Obligation

The parties will make and execute all further instruments and documents required to carry out the purposes and intent of the agreement.

19. Reference

Use of the masculine includes feminine and neuter, singular includes plural; and captions and headings are inserted for convenience of reference and do not define, describe, extend or limit the scope of intent of the agreement.

20. Interpretation

All of the terms and conditions contained herein shall be interpreted in accordance with the laws of the State of North Carolina. In the event of a conflict between the various terms and conditions contained herein or between these terms and other applicable provisions, then the more particular shall prevail over the general and the more stringent or higher standard shall prevail over the less stringent or lower standard.

21. Saving Clause

If any section, subsection, paragraph, sentence, clause, phrase or portion of this contract is for any reason held invalid, unlawful, or unconstitutional by any court of competent jurisdiction, such portion shall be deemed severable and such holding shall not affect the validity of the remaining portions hereof.

22. Other Laws and Regulations

CONTRACTOR will comply with any and all applicable federal, state and local standards, regulations, laws, statutes and ordinances including those regarding toxic, hazardous and solid wastes and any pollutants; public and private nuisances; health or safety; and zoning, subdivision

or other land use controls. CONTRACTOR will take all reasonably necessary, proper or required safety, preventative and remedial measures in accordance with any and all relations and directives from the North Carolina Department of Human Resources, the United States Environmental Protection Agency, the North Carolina Department of Environmental Quality, Health Departments, and any other federal, state or local agency having jurisdiction, to insure the prompt prevention or cessation (now or in the future) of violations of either the applicable provisions of such standards, regulations, laws, statutes, and ordinances or any permits or conditions issued thereunder. CONTRACTOR specifically acknowledges and agrees that CONTRACTOR, and any subcontractors it uses, has complied with and shall continue to comply with the provisions of the federal E-Verify program in compliance with Article 2 of Chapter 64 of the North Carolina General Statutes. CONTRACTOR shall maintain adequate safeguards with respect to sensitive customer information in conformance with and pursuant to 16 C.F.R. §681.1 and in accordance with N.C. Gen. Stat. §132-1.10 and §75-65.

23. Amendments

This agreement shall not be modified or otherwise amended except in writing signed by the parties.

24. Non-Discrimination

CONTRACTOR will take affirmative action not to discriminate against any employee or applicant for employment or otherwise illegally deny any person participation in or the benefits of the program which is the subject of this agreement because of race, creed, color, sex, age, disability or national origin. To the extent applicable, CONTRACTOR will comply with all provisions of Executive Order No. 11246, the Civil Rights Act of 1964, (P.L. 88-352) and 1968 (P.L. 90-284), and all applicable federal, state and local laws, ordinances, rules, regulations, orders, instructions, designations and other directives promulgated to prohibit discrimination. Violation of this provision, after notice, shall be a material breach of this agreement and may result, at CITY'S option, in a termination or suspension of this agreement in whole or in part.

25. Authority to Act

Each of the persons executing this Agreement on behalf of CONTRACTOR does hereby covenant, warrant and represent that the CONTRACTOR is a duly organized and validly existing legal entity authorized to transact business within the State of North Carolina, that the CONTRACTOR has full right and authority to enter into this Agreement, and that each and all persons signing on behalf of the CONTRACTOR were authorized to do so.

26. Counterparts.

This Agreement may be executed in several counterparts, including separate counterparts. Each shall be an original, but all of them together constitute the same instrument.

27. No Publicity.

No advertising, sales promotion or other materials of the CONTRACTOR or its agents or representations may identify or reference this Contract or the CITY in any manner absent the written consent of the CITY. Notwithstanding the forgoing, the parties agree that the CONTRACTOR may list the CITY as a reference in responses to requests for proposals and may identify the CITY as a customer in presentations to potential customers.

28. Immunity Not Waived

This Agreement is governmental in nature, for the benefit of the public. CONTRACTOR acknowledges that City reserves all immunities, defenses, rights or actions arising out of City's sovereign status under applicable law. No waiver of any such immunities, defenses, rights or actions shall be implied or otherwise deemed to exist by reason of City's entry into this Agreement.

29. CITY Not Liable For Special or Consequential Damages.

The CITY shall not be liable to the CONTRACTOR, its agents or representatives or any subcontractor for or on account of any stoppages or delay in the performance of any obligations of the CITY, or any other consequential, indirect or special damages or lost profits related to this Contract.

30. Public Records.

CONTRACTOR acknowledges that the CITY is a public entity, subject to North Carolina's public records laws (N.C.G.S. § 132) and that any documents related to this Agreement may be subject to disclosure pursuant to state law in response to a public records request or to subpoena or other judicial process.

If CONTRACTOR believes documents related to the Agreement contain trade secrets or other proprietary data, CONTRACTOR must notify the CITY and include with the notification a statement that explains and supports CONTRACTOR'S claim. CONTRACTOR also must specifically identify the trade secrets or other proprietary data that CONTRACTOR believes should remain confidential.

In the event the CITY determines it is legally required to disclose pursuant to law any documents or information CONTRACTOR deems confidential trade secrets or proprietary data, the CITY, to the extent possible, will provide CONTRACTOR with prompt written notice by certified mail, fax, email, or other method that tracks delivery status of the requirement to disclose the information so CONTRACTOR may seek a protective order from a court having jurisdiction over the matter or obtain other appropriate remedies. The notice will include a time period for CONTRACTOR to seek court ordered protection or other legal remedies as deemed appropriate by CONTRACTOR. If CONTRACTOR does not obtain such court ordered protection by the expiration of said time period, the CITY may release the information without further notice to CONTRACTOR.

31. Minority Business Enterprise (MBE)

The CITY desires that minority business enterprises have the maximum opportunity to participate in the performance of this contract and will:

31.l Promote affirmatively (where feasible) in accordance with North Carolina General Statute l43-l29, together with all other applicable laws, statutes and constitutional provisions, the procurement of goods, services in connection with construction projects for minority owned business enterprises.

31.2 Ensure that competitive and equitable bidding opportunities are followed to afford minority business enterprises participation. Strive to obtain contract and subcontract awards to minority business enterprises.

31.3 Identify and communicate to the minority business enterprises community procedures and contract requirements necessary for procurement of goods and services for construction projects and subcontracts.

31.4 Provide technical assistance as needed.

31.5 Promulgate and enforce contractual requirements that the general CONTRACTOR or all construction projects shall exercise all necessary and reasonable steps to insure that minority business enterprises participate in the work required in such construction contracts.

The CONTRACTOR shall ensure that minority business enterprises have the maximum opportunity to compete for and perform portions of the work included in this contract and shall not discriminate on the basis of race, color, national origin or sex. The CONTRACTOR shall include this special provision, Minority Business Enterprise (MBE), in all subcontracts for this contract. Failure on the part of the CONTRACTOR to carry out the requirements set forth in this special provision may constitute a breach of contract and after proper notification may result in termination of the contract or other appropriate remedy.

A minority business enterprise is defined as a business, with at least fifty-one (51%) percent owned and controlled by minority group members. The minority ownership must exercise actual day-to-day management. Minority group members may consist of Black Americans (an individual of the Black race of African origin), Hispanic Americans (an individual of a Spanish speaking culture and origin at parentage), Asian Americans (an individual of a culture, origin or parentage traceable to the areas of the Far East, Southeast Asia, the Indian subcontinent and the Pacific Islands), Indian Americans (an individual who is an enrolled member of a Federally recognized Indian tribe, or recognized by the tribe as being an Indian, as evidenced by a certification of a tribal leader), American Aleuts or any recognized minority group approved by the CITY.

A Woman Business Enterprise is a business with at least fifty-one (51%) percent owned and controlled by women who exercise actual day-to-day management.

The CONTRACTOR shall exercise all necessary and reasonable steps to ensure that Minority Business Enterprises and Woman Business Enterprises participate in the work required in this contract. The CONTRACTOR agrees by executing this contract that he will exercise all necessary and reasonable steps to ensure that this special provision contained herein on Minority Business Enterprise is complied with.

IN WITNESS WHEREOF, the CITY has caused this agreement to be duly executed in its name and behalf and the CONTRACTOR has caused this agreement to be duly executed in its name and behalf and its corporate seal to be hereunto affixed and attested to.

CITY OF WILMINGTON, NORTH CAROLINA

BY: _____
Becky Hawke, City Manager

Date: _____

WITNESS:

_____
Daryle L. Parker, Purchasing Manager

APPROVED AS TO FORM:

_____
Gina Essey, Assistant City Attorney

FINANCE OFFICER'S CERTIFICATION STATEMENT

This instrument has been preaudited in the manner required by the Local Government Budget and Fiscal Control Act this the _____ day of _____, 2025.

_____
Martha Wayne, Director of Finance

Project String: _____

Org./Obj. _____

Amount of Contract $_____

Req. No.: _____

Federal ID Number: 56-6000239

_____

BY: _____

ATTEST:

_____
Secretary, Assistant Secretary,
Trust Officer

(CORPORATE SEAL)

STATE OF _____

COUNTY OF _____

I, _____, a Notary Public, certify that
(Name)
_____ personally came before me this day and
(Name of Sec., Assist. Sec., Cashier, Assist. Cashier)

acknowledged that he (she) is _____ of
(Secretary, Assist. Sec., Cashier, Assist. Cashier)

_____, a corporation, and that by authority duly given and
(Name of Corporation)

as the act of the corporation, the foregoing Contract: Page C-10, Performance Bond: Page C-11, and

Payment Bond: Page C-12 were signed in its name by its

_____, sealed with
(President or Vice President)

its corporate seal, and attested by himself (or herself) as its

_____.
(Sec., Assist. Sec., Cashier, Assist. Cashier)

WITNESS my hand and official seal, this the _____ day of _____, 2025.

_____
Notary Public

My Commission expires: _____

(NOTARY SEAL)

PERFORMANCE BOND

CITY OF WILMINGTON, NORTH CAROLINA

PRINCIPAL: _____

SURETY: _____

BOND AMOUNT: _____

_____DOLLARS ($_____)

BOND DATE: _____

CONTRACT NUMBER: _____

"KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL AND SURETY above named, are held and firmly bound unto the CITY OF WILMINGTON, NORTH CAROLINA, hereinafter called the CITY, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

"THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal entered into a certain contract with the CITY, numbered as shown above and hereto attached:

"NOW, THEREFORE, if the Principal shall well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term of said contract and any extensions thereof that may be granted by the CITY, with or without notice to the Surety, and during the life of any guaranty required under the contract, and shall also well and truly perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then, this obligation to be void, otherwise to remain in full force and virtue.

"IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body."

(CORPORATE SEAL)

ATTEST:

PRINCIPAL: _____

_____
Secretary

By: _____

Title: _____

SURETY: _____

WITNESS:

By: _____

_____

Title: _____

PAYMENT BOND

CITY OF WILMINGTON, NORTH CAROLINA

PRINCIPAL: _____

SURETY: _____

BOND AMOUNT: _____

_____DOLLARS ($_____)

BOND DATE: _____

CONTRACT NUMBER: _____

"KNOW ALL MEN BY THESE PRESENTS, That we, the PRINCIPAL AND SURETY above named, are held and firmly bound unto the CITY OF WILMINGTON, NORTH CAROLINA, hereinafter called the CITY, in the penal sum of the amount stated above for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally, firmly by these presents.

"THE CONDITION OF THIS OBLIGATION IS SUCH that whereas the Principal entered into a certain contract with the CITY, numbered as shown above and hereto attached:

"NOW, THEREFORE, if the Principal shall promptly make payment to all persons supplying labor and material in the prosecution of the work provided for in said contract, and any and all duly authorized modifications of said contract that may hereafter be made, notice of which modifications to the Surety being hereby waived, then this obligation to be void; otherwise to remain in full force and virtue.

"IN WITNESS WHEREOF, the above-bounden parties have executed this instrument under their several seals on the date indicated above, the name and corporate seal of each corporate party being hereto affixed and these presents duly signed by its undersigned representative, pursuant to authority of its governing body."

(CORPORATE SEAL)

ATTEST:

PRINCIPAL: _____

_____
Secretary

By: _____

Title: _____

SURETY: _____

WITNESS:

By: _____

_____

Title: _____

(TO BE EXECUTED ON BEHALF OF SURETY AGENT)

STATE OF _____

COUNTY OF _____

On this the _____ day of _____, 2025 before me the subscriber, Notary Public of the State of _____, in and for the County of _____, duly commissioned and qualified came _____, to me personally known, and to me personally known to be the individual who executed the foregoing Payment Bond and Performance Bond: Pages C-9 and C-10, and he acknowledges the execution of the same, and being by me duly sworn deposes and says that he has Power-of-Attorney from _____ _____, with their principal offices at _____, to execute the preceding instruments in the amount specified in the Payment Bond and Performance Bond on their behalf, that his signature was duly affixed and he subscribed to the said Payment Bond and Performance Bond by authority and direction of said corporation.

IN WITNESS, I have hereunto set my hand and affixed my official seal at the City of _____, the day and year first above written.

My Commission expires:

_____

_____
Notary Public

(SEAL)

POWER OF ATTORNEY

DOCUMENTS

(Attached hereto original or validated documents which give to individual who signed Contract Bond Power of Attorney for Surety)

INSURANCE CERTIFICATES

(Staple Insurance Certificates as required
under Paragraph G-1.06 to this sheet)

CITY OF WILMINGTON

NORTH CAROLINA

PROPOSAL
FOR
GREENVILLE LOOP TRAIL SECTION 3-GREENVILLE LOOP SIDEWALK
PROJECT NO. 2TRST1591-2TRSW2310
CONTRACT NO. GLT-ST-0925

1. The undersigned, having carefully examined the site of the proposed work, the entire Bidding Document, including but not limited to the Advertisement, Special Notice, General Provisions, Technical Specifications, MBE/WBE/HUB/DBE documents and requirements, Federal Requirements (if any), Contract and Plans and/or Standard Details attached hereto, all of which are fully understood and hereby agreed to, proposes to furnish all materials, labor, equipment and plant necessary to complete in-place the specified improvements, in strict accordance with the above mentioned bidding documents.

2. Where an interpretation as to specifications is necessary, or as to the character of the work performed, or as to further instructions relating to the work, before or during construction, the undersigned bidder hereby agrees that (hereinafter called "ENGINEER") shall be the authority and his word shall be final.

3. The prices, as stated, are for the work completed and also to include all charges and expenses for furnishing all labor, materials, equipment and plant for completing the specified work in the manner specified in the specifications, and according to the instructions of the ENGINEER, unless otherwise shown in the Proposal.

4. If awarded this contract, the undersigned agrees to begin construction on the date to be specified in the written order by the Purchasing Manager, and to complete all work within **250** calendar days of the date of beginning. The CONTRACTOR further agrees to pay, as liquidated damages, (**SEE PROJECT SPECIAL PROVISIONS)** for each consecutive calendar day thereafter as hereinafter provided in paragraph G-1.47 of the General Conditions.

5. The undersigned hereby certifies that this Proposal is made without connection with any person or persons making bids or proposals for the above work, and that the bid is in all respects fair and without collusion or fraud.

6. The undersigned further agrees that in case of failure on his part to execute the said contract and bond within ten (10) consecutive calendar days after written notice of award of the contract by the Purchasing Manager , the check or bid bond, or both, accompanying this bid and the monies payable thereon shall be paid into the funds of the City of Wilmington, North Carolina, as liquidated damages for such failure; otherwise the check and/or bid bond accompanying this Proposal shall be returned to the undersigned.

7. The undersigned understands and agrees that if awarded this contract he will execute the contract and post a Performance Bond and Payment Bond to the extent of one hundred percent (100%) of the amount of this contract.

8. The undersigned understands and agrees that all extra work shall be done and paid for as provided under the applicable sections of the specifications. In the event that extra work is necessary, the percentage to be added to the actual payroll cost to cover Social Security, small hand tools, office overhead on labor management only, Workmen's Compensation Insurance and other insurance for labor costs shall be 5% percent.

   All extra work shall be done using actual payroll and material costs, and a profit of ten percent (10%) of the total cost shall be added thereto. All items of materials shall be billed to the CITY on the extra work invoice, and a delivery slip from the vendor shall be submitted therewith to verify actual cost. No additional profit will be allowed on materials other than the normal overall ten percent (10%) above stated. Items not provided for above shall be agreed upon between the CONTRACTOR and the ENGINEER prior to invoicing.

9. The undersigned understands that, if awarded this contract, he must guarantee, for a period of one year after date of final payment, all work accomplished under this contract to the extent that he will repair any defects due to faulty workmanship, or materials which may appear in his work during this period.

10. The undersigned supplies the information recorded below for use in the preparation of the contract documents, in event of contract award:

    10.1 Please indicate type of business organization:

    (a) Proprietorship _____
    (b) Partnership _____
    (c) Corporation _____
    (d) Limited Liability Co. _____

    10.2 If business is a Corporation, please answer the following questions:

    Name and title of officers, authorized by Corporate Resolution, who will execute the contract on behalf of corporation (generally President and Secretary).

Firm is incorporated in what state?

_____

If firm is a foreign corporation, does firm have a certificate of authority from the North Carolina Secretary of State? _____

10.3 If business is a Partnership, please answer the following:

Name in full or all general partners and addresses:

_____ Is this a limited or general partnership? _____

If a limited partnership, what is state of registration? _____

If business is a foreign limited partnership, does business have a certificate of authority from the North Carolina Secretary of State? _____

10.4 If business is a Proprietorship, please answer the following:

Name of owner: _____

10.5 If business is a limited liability company, please answer the following:

List the names and title of managers or member-managers who will execute the contract on behalf of the company? _____

What is state of organization? _____

If business is a foreign limited liability company, does business have a certificate of authority from the North Carolina Secretary of State? _____

10.6 For all bidders:

If the business operates under an assumed name, what is the assumed name?

Has a certificate of assumed name been filed in the New Hanover County Registry? _____

If so, please provide the recording information. Deed Book _____ at Page _____.

11. Bid Surety Information - Please fill in the applicable paragraph.

11.1 Attached hereto is a cash deposit in the amount of _____ _____ Dollars ($_____), this amount being not less than five percent (5%) of the total bid.

OR

11.2 Attached hereto is a certified check on the _____ Bank of _____ in the amount of _____ _____ Dollars ($_____), made payable to the City of Wilmington, North Carolina. The bank on which the certified check is submitted is warranted to be a member of the Federal Deposit Insurance Corporation, and the amount of the check is not less than five percent (5%) of the total bid.

OR

11.3 Attached hereto is a bid bond in the amount of five percent (5%) of the total bid, said bid bond being indemnified by the _____ (Insert Name of Bonding Company) whose address is _____. This bond is executed by a corporate surety licensed to issue such bonds in the State of North Carolina and is made payable to the City of Wilmington. This bid bond is conditioned so that the surety will upon demand make payment to the City of Wilmington upon said bond if the

bidder fails to execute the contract the surety shall pay to the CITY an amount equal to the amount of said bid bond in an amount not less than five percent (5%) of the total bid.

12. Additional Information - Please respond to each:

12.1 North Carolina Tax Payer Identification Number:

_____

12.2 Does your company have an Affirmative Action Plan

Yes _____ No _____

13. The undersigned proposes to accomplish the work as described in the following at the unit prices and/or lump sum price shown. In the event of a discrepancy in the unit prices and the extended prices, the unit prices shall prevail.

GREENVILLE LOOP MULTI-USE TRAIL – SECTION 3

Line #	Item #	Sec #	Description	Quantity	Units	Unit Cost	Amount
1	0000100000-N	800	MOBILIZATION	1	LS		
2	0000400000-N	801	CONSTRUCTION SURVEYING	1	LS		
3	0043000000-N	226	GRADING	1	LS		
4	0156000000-E	250	REMOVAL OF EX. ASPHALT PAVEMENT	22,940	SF		
5	0163000000-E	250	REMOVAL OF EX. CONCRETE PAVEMENT	13,150	SF		
6	0000960000-E	SP	REMOVE GRAVEL	8802	SF		
7	0000960000-E	SP	REMOVE BRICK	2457	SF		
8	0000930000-E	SP	REMOVAL OF 24'' CURB & GUTTER	6612	LF		
9	0000915000-N	SP	REMOVE AND RELOCATE MAILBOX	9	EA		

10	0000915000-N	SP	REMOVE AND RELOCATE TELECOM PEDESTAL	4	EA		
11	0000915000-N	SP	REMOVE AND RELOCATE SIGN	12	EA		
12	0001010000-N	200	REMOVE TREES	1	LS		
13	0001010000-N	200	REMOVE, STORE, RELOCATE SHRUBS	1	LS		
14	0001000000-E	200	REMOVE VEGETATION	1	LS		
15	0000930000-E	SP	REMOVE FENCE	67	LF		
16	0000930000-E	SP	REMOVE WALL	146	LF		
17	0448200000-E	310	15" RCP PIPE, CLASS IV	3343	LF		
18	0448300000-E	310	18" RCP PIPE, CLASS IV	97	LF		
19	0448400000-E	310	24" RCP PIPE, CLASS IV	26	LF		
20	0335100000-E	305	12” HDPE PIPE	379	LF		
21	0335200000-E	305	15” HDPE PIPE	561	LF		
22	0335300000-E	305	18’’ HDPE PIPE	459	LF		
Line #	**Item #**	**Sec #**	**Description**	**Quantity**	**Units**		
23	0988000000-E	310	FES	8	EA		
24	0995000000-E	340	PIPE REMOVAL	1,488	LF		
25	5828000000-N	340	REMOVE UTILITY MANHOLE/CURB INLET	14	EA		
26	1115000000-E	SP	GEOTEXTILE FOR PAVEMENT STABILIZATION	5551	SY		

27	1330000000-E	607	INCIDENTAL MILLING ASPHALT PAVEMENT, 1.5'' DEPTH	842	SY		
28	1121000000-E	520	AGGREGATE BASE COURSE	2744	TON		
29	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	475	TON		
30	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	6	TON		
31	1736000000-E	723	SELECT MATERIAL, CLASS IV	27	TON		
32	2472000000-N	840	PRECAST MANHOLE/JUNCTION BOX	4	EA		
33	2472000000-N	840	DROP INLET	5	EA		
34	2472000000-N	840	CATCH BASIN	39	EA		
35	2472000000-N	840	24'' FRAME, GRATE, AND HOOD	39	EA		
36	2472000000-N	840	DROP INLET GRATE	5	EA		
37	2472000000-N	840	MANHOLE COVER	4	EA		
38	2472000000-N	840	NYLOPLAST DRAIN BASIN	15	EA		
39	2830000000-N	858	ADJUSTMENT OF MANHOLES/JB	12	EA		
40	2538000000-E	846	2'-0" CONCRETE CURB & GUTTER	6612	LF		
41	2759000000-N	SP	RAISED PAVEMENT MARKERS	6	EA		
42	2759000000-N	846	DETECTABLE WARNING DOMES	24	EA		
43	2759000000-N	SP	ASPHALT CURB RAMPS	24	EA		
44	2612000000-E	848	6" CONCRETE DRIVEWAY	625	SY		

45	2591000000-E	848	4" CONCRETE SIDEWALK W/W.W.M.	185	SY		
46	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKINGLINES SKIP (4", 90 MILS)	1417	LF		
Line #	**Item #**	**Sec #**	**Description**	**Quantity**	**Units**		
47	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKINGLINES CONT. (4", 90 MILS)	1650	LF		
48	4709000000-E	1205	THERMOPLASTIC PAVEMENT MARKINGLINES (24", 90 MILS)	864	LF		
49	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKINGSYMBOL (90 MILS)	2	EA		
50	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING ARROW SYMBOL (90 MILS)	9	EA		
51	5689000000-E	1515	ADJUST MH/JB RIM	17	EA		
52	5689000000-E	1515	ADJUST WATER METER BOX	2	EA		
53	5689000000-E	1515	ADJUST FIBER OPTIC BOX	1	EA		
54	5648000000-E	1515	RELOCATE WATER METER	1	EA		
55	5689000000-E	1515	ADJUST WATER VALVE	11	EA		
56	5656000000-E	1515	RELOCATE BACKFLOW	1	EA		
57	5768000000-N	1520	ADJUST SANITARY SEWER CLEANOUT	2	EA		
58	6147000000-E	SP	TEMPORARY TREE PROTECTION FENCE	1215	LF		
59	6000000000-E	1605	TEMPORARY SILT FENCE	4802	LF		
60	6132000000-N	EA	HARDWARE CLOTH AND GRAVEL INLET PROTECTION	69	EA		
61	6132000000-N	EA	BLOCK AND GRAVEL STONE INLET PROTECTION	20	EA		

62	6132000000-N	EA	HORSE SHOE INLET PROTECTION	16	EA		
63	6132000000-N	EA	TEMPORARY CONSTRUCTION ENTRANCE	5	EA		
64	6147000000-E	LF	TEMPORARY DIVERSION DITCH	505	LF		
65	6015000000-E	1615	TEMPORARY MULCHING	0.5	ACR		
66	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	100	LB		
67	6021000000-E	1620	FERTILIZER FOR TEMPORARY OR PERMANENT SEEDING	0.5	TON		
68	6029000000-E	SP	SAFETY FENCE	200	LF		
69	6030000000-E	1630	SILT EXCAVATION	750	CY		
70	6030000000-E	1631	MATTING FOR EROSION CONTROL	4,500	SY		
Line #	**Item #**	**Sec #**	**Description**	**Quantity**	**Units**		
71	6037000000-E	SP	COIR FIBER MAT	100	SY		
72	6042000000-E	1632	1/4" HARDWARE CLOTH	1,090	LF		
73	6071012000-E	SP	COIR FIBER WATTLE	590	LF		
74	6071020000-E	SP	POLYACRYLAMIDE (PAM)	145	LB		
75	6084000000-E	1660	PERMANENT SEEDING & MULCHING	0.5	ACR		
76	6087000000-E	1660	MOWING	0.5	ACR		
77	6090000000-E	1661	SEED FOR REPAIR SEEDING	50	LB		
78	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	0.25	TON		

79	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	50	LB		
80	6108000000-E	1665	FERTILIZER TOPDRESSING	0.25	TON		
81	6114500000-N	1667	SPECIALIZED HAND MOWING	10	MHR		
82	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	25	EA		
83	5882000000-N	SP	STRUCTURAL BRIDGING OVER WATER & SEWER PIPLINES	22	EA		
84	6132000000-N	SP	CONCRETE WASHOUT	1	EA		
85	5882000000-N	SP	PRESSURE MAIN AND STORM DRAIN CROSSING	16	EA		
86	5912000000-N	SP	ALLOWANCE FOR WATER AND SEWER SERVICE RELOCATIONS/RECONNECTIONS	1	LS		
87	5882000000-N	SP	OFFSET CATCH BASIN TO EXISTING STORM DRAIN INLET	11	EA		
88	5882000000-N	SP	CURB FLUME TO EXISTING STORM DRAIN INLET	1	EA		

TOTAL BID: _____

IN WORDS: _____

GREENVILLE LOOP SIDEWALK

Line Item	Section No.	Description	Quantity	Unit	Price	Amount
1	800	Mobilization	1	LS		
2	801	Construction Surveying	1	LS		
3	226	Grading	1	LS		
4	300	Foundation Conditioning Material, Minor Structures	10	TON		
5	300	Foundation Conditioning Geotextile	30	SY		
6	310	15" RCP Pipe Culverts	24	LF		
7	310	18" RCP Pipe Culverts	24	LF		
8	1036	18" DIP Pipe	14	LF		
9	PSP	6" PVC Pipe (Includes Wyes, Tees, & Elbows)	28	LF		
10	840	Pipe Collar, 18" Pipe	1	CY		
11	340	Pipe Removal	6	LF		
12	520	Aggregate Base Course	40	TON		
13	846	6"x12" Concrete Curb	200	LF		
14	848	4" Concrete Sidewalk	650	SY		
15	PSP	Flexible Pavement	20	SY		
16	PSP	Concrete Flume Crossing	1	EA		
17	848	Concrete Curb Ramps	6	EA		
18	848	6" Concrete Driveway (High Early Strength)	30	SY		

19	PSP	Temporary Traffic Control	1	LS		
20	858	Adjustment of Meter Box or Valve Box	3	EA		
21	903	Supports, Steel Square Tube	28	LF		
22	904	Sign Erection, Type E	2	EA		
23	907	Disposal of Support, U-Channel	2	EA		
24	PSP	Adjustment of Sanitary Sewer Clean-out	2	EA		
25	1515	Relocate Fire Hydrant	1	EA		
26	1605	Wattles	160	LF		
27	1610	Sediment Control Stone	4	TONS		
28	PSP	Tree Protection Fence	1,200	LF		
29	1631	Matting for Erosion Control	760	SY		
30	1632	¼" Hardware Cloth	40	LF		
31	PSP	Temporary Seeding and Mulching	1,500	SY		
32	PSP	Permanent Lawn Seeding and Mulching	1,625	SY		
33	PSP	Response to Erosion Control	2	EA		
34	PSP	Concrete Washout Structure	1	EA		
35	PSP	Private Fence - Wood (6322 Greenville Loop Rd)	1	LS		
36	PSP	Private Fence - Vinyl 3-Rail White (6200 Twin Magnolias Ln)	1	LS		
37	PSP	Replace Timber Wall (6322 Greenville Loop Rd)	1	LS		

TOTAL: _____

IN WORDS:

_____

COMBINED TOTAL: $_____

COMBINED TOTAL IN WORDS: ____

_____

14. The undersigned understands that the award under this Proposal will be made to the lowest responsible bidder as described in Section G-1.02 of the General Provisions, on the proposal page or in Section 15 Special Conditions.

15. The undersigned acknowledges receipt of any issued Addendums to this Project by recording the Addendum number and date acknowledged below:

Addendum #1: _____Dated: _____
Addendum #2: _____Dated: _____
Addendum #3: _____Dated: _____

If awarded the work, I/we agree to begin work as soon as given the notice to proceed and complete the work ready for occupancy within the time limits specified.

This Proposal is submitted by:

_____
Company Name

Signed by: _____
Authorized Person's Signature

_____
Type or Print Name of Person Signing Above

Title: _____

Address: _____

_____ Zip_____

Phone: _____

Date: _____

North Carolina Contractor's License Number: _____

Rev.

PROJECT SPECIAL PROVISIONS

GENERAL

CONTRACT TIME AND LIQUIDATED DAMAGES:

(8-15-00) (Rev. 12-18-07) 108 SP1 G07 A

The date of availability for this contract is **the date of the Notice to Proceed issued by the City of Wilmington**, except that work in jurisdictional waters and wetlands shall not begin until a meeting between the DOT, Regulatory Agencies, and the Contractor is held as stipulated in the permits contained elsewhere in this proposal. This delay in availability has been considered in determining the contract time for this project.

The completion date for this contract is **Two hundred and Fifty (250) calendar days from the date of Notice to Proceed.**

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Seven Hundred and Fifty Dollars ($750.00)** per calendar day. These liquidated damages will not be cumulative with any liquidated damages which may become chargeable under Intermediate Contract Time Number 1.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(7-1-95) (Rev. 2-21-12) 108 SP1 G13 A

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date of availability of the contract.

The completion date for this intermediate contract time is the date which is **One Hundred and Eighty (180)** consecutive calendar days from the Notice to Proceed (NTP).

The liquidated damages for this intermediate contract time are **Seven Hundred Dollars ($750)** per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the City of Asheville will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible

for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES:

(2-20-07) 108 SP1 G14 A

The Contractor shall complete the required work of installing, maintaining, and removing the traffic control devices for lane closures and restoring traffic to the existing traffic pattern. The Contractor shall not close or narrow a lane of traffic on **Greenville Loop Loop Road** during the following time restrictions:

DAY AND TIME RESTRICTIONS

7:15 AM to 9:00 AM	**Monday thru Friday**
1:45 PM to 3:30 PM	**Monday thru Friday**

In addition, the Contractor shall not close or narrow a lane of traffic on **Greenville Loop Road**, detain and/or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.

2. For **New Year's Day**, between the hours of **9:00 PM** December 31st and **6:00 AM** January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **6:00 AM** the following Tuesday.

3. For **Easter**, between the hours of **9:00 AM** Thursday and **6:00 AM** Monday.

4. For **Memorial Day**, between the hours of **9:00 PM** Friday and **6:00 AM** Tuesday.

5. For **Independence Day**, between the hours of **9:00 PM** the day before Independence Day and **6:00 AM** the day after Independence Day.

   If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **9:00 PM** the Thursday before Independence Day and **6:00 AM** the Tuesday after Independence Day.

6. For **Labor Day**, between the hours of **9:00 PM** Friday and **6:00 AM** Tuesday.

7. For **Thanksgiving Day**, between the hours of **9:00 PM** Tuesday and **6:00 AM** Monday.

8. For **Christmas**, between the hours of **9:00 PM** the Friday before the week of Christmas Day and **6:00 AM** the following Tuesday after the week of Christmas Day.

Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures will not be required during these periods, unless otherwise directed by the Engineer.

The time of availability for this intermediate contract work shall be the time the Contractor begins to install all traffic control devices for lane closures according to the time restrictions listed herein.

The completion time for this intermediate contract work shall be the time the Contractor is required to complete the removal of all traffic control devices for lane closures according to the time restrictions stated above and place traffic in the existing traffic pattern.

The liquidated damages are **One Thousand Dollars** (**$1000.00**) per hour.

PROSECUTION OF WORK:

(7-1-95) (Rev. 8-21-12) 108 SP1 G15R

The Contractor will be required to prosecute the work in a continuous and uninterrupted manner from the time he begins the work until completion and final acceptance of the project. The Contractor will not be permitted to suspend his operations except for reasons beyond his control or except where the Engineer has authorized a suspension of the Contractor's operations in writing.

In the event that the Contractor's operations are suspended in violation of the above provisions, the sum of **$750.00** will be charged the Contractor for each and every calendar day that such suspension takes place. The said amount is hereby agreed upon as liquidated damages due to extra engineering and maintenance costs and due to increased public hazard resulting from a suspension of the work. Liquidated damages chargeable due to suspension of the work will be additional to any liquidated damages that may become chargeable due to failure to complete the work on time.

PERMANENT VEGETATION ESTABLISHMENT:

(2-16-12) (Rev. 10-15-13) 104 SP1 G16

Establish a permanent stand of the vegetation mixture shown in the contract. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish permanent vegetation on all erodible areas within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the applicable section of the *2018 Standard Specifications*. All work required for initial vegetation planting shall be performed as a part of the work necessary for the completion and acceptance of the Intermediate Contract Time (ICT). Between the time of ICT and Final Project acceptance, or otherwise referred to as the vegetation establishment period, the Department will be responsible for preparing the required National Pollutant Discharge Elimination System (NPDES) inspection records.

Once the Engineer has determined that the permanent vegetation establishment requirement has been achieved at an 80% vegetation density (the amount of established vegetation per given area to stabilize the soil) and no erodible areas exist within the project limits, the Contractor will be notified to remove the remaining erosion control devices that are no longer needed. The Contractor will be responsible for, and shall correct any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project.

Payment for *Response for Erosion Control*, *Seeding and Mulching, Repair Seeding*, *Supplemental Seeding, Mowing, Fertilizer Topdressing, Silt Excavation,* and *Stone for Erosion Control* will be made at contract unit prices for the affected items. Work required that is not represented by contract line items will be paid in accordance with Articles 104-7 or 104-3 of the *2018 Standard Specifications*. No additional compensation will be made for maintenance and removal of temporary erosion control items.

NO MAJOR CONTRACT ITEMS:

(2-19-02) (Rev. 8-21-07) 104 SP1 G31

None of the items included in this contract will be major items.

NO SPECIALTY ITEMS:

(7-1-95) 108-6 SP1 G34

None of the items included in this contract will be specialty items (see Article 108-6 of the *2018 Standard Specifications*).

[redacted]

PROJECT SPECIAL PROVISIONS

ROADWAY

CONSTRUCTION SEQUENCE:

(7-1-95) (Rev. 8-21-12) 560 SP1 R34R

Pave each section of roadway begun in a continuous operation. Do not begin work on another section of roadway unless satisfactory progress is being made toward completion of intersections and all other required incidental work by satisfactorily furnishing additional paving equipment and personnel, except for milling and patching operations.

CLEARING AND GRUBBING - METHOD II:

(9-17-02) (Rev.8-18-15) 200 SP2 R002A

Perform clearing on this project to the limits established by Method "II" shown on Standard Drawing No. 200.02 of the *2018 Roadway Standard Drawings*. Conventional clearing methods may be used except where permit drawings or conditions have been included in the proposal which require certain areas to be cleared by hand methods.

BURNING RESTRICTIONS:

(7-1-95) 200, 210, 215 SP2 R05

Open burning is not permitted on any portion of the right-of-way limits established for this project. Do not burn the clearing, grubbing or demolition debris designated for disposal and generated from the project at locations within the project limits, off the project limits or at any waste or borrow sites in this county. Dispose of the clearing, grubbing and demolition debris by means other than burning, according to state or local rules and regulations.

SHOULDER AND FILL SLOPE MATERIAL:

(5-21-02) 235, 560 SP2 R45 A

Description

Perform the required shoulder and slope construction for this project in accordance with the applicable requirements of Section 560 and Section 235 of the *2018 Standard Specifications*.

Measurement and Payment

Where the material has been obtained from an authorized stockpile or from a borrow source and *Borrow Excavation* is not included in the contract, no direct payment will be made for this work, as the cost of this work will be part of the work being paid at the contract lump sum price for *Grading.* If *Borrow Excavation* is included in this contract and the material has been obtained from an authorized stockpile or from a borrow source, measurement and payment will be as provided in Section 230 of the *2018 Standard Specifications* for *Borrow Excavation*.

AGGREGATE SUBGRADE:

(5-15-18) 505 SP5 R8

Revise the *2018 Standard Specifications* as follows:

Page 5-8, Article 505-1 DESCRIPTION, lines 4-6, replace the paragraph with the following:

Construct aggregate subgrades in accordance with the contract. Install geotextile for soil stabilization and place Class IV subgrade stabilization at locations shown in the plans and as directed.

Undercut natural soil materials if necessary to construct aggregate subgrades. Define "subbase" as the portion of the roadbed below the Class IV subgrade stabilization. For Type 2 aggregate subgrades, undercut subbases as needed. The types of aggregate subgrade with thickness and compaction requirements for each are as shown below.

Type 1 – A 6 to 24 inch thick aggregate subgrade with Class IV subgrade stabilization compacted to 92% of AASHTO T 180 as modified by the Department or to the highest density that can be reasonably obtained.

Type 2 – An 8 inch thick aggregate subgrade on a proof rolled subbase with Class IV subgrade stabilization compacted to 97% of AASHTO T 180 as modified by the Department.

Page 5-8, Article 505-3 CONSTRUCTION METHODS, line 12, insert the following after the first sentence of the first paragraph:

For Type 2 aggregate subgrades, proof roll subbases in accordance with Section 260 before installing geotextile for soil stabilization.

Page 5-8, Article 505-3 CONSTRUCTION METHODS, lines 16-17, replace the last sentence of the first paragraph with the following:

Compact ABC as required for the type of aggregate subgrade constructed.

Page 5-8, Article 505-4 MEASUREMENT AND PAYMENT, line 26, insert the following after the last sentence of the first paragraph:

Undercut Excavation of natural soil materials from subbases for Type 2 aggregate subgrades will be measured and paid in accordance with Article 225-7 or 226-3. No measurement will be made for any undercut excavation of fill materials from subbases.

INCIDENTAL STONE BASE:

(7-1-95) (Rev.8-21-12) 545 SP5 R28R

Description

Place incidental stone base on driveways, mailboxes, etc. immediately after paving and do not have the paving operations exceed stone base placement by more than one week without written permission of the Engineer.

Materials and Construction

Provide and place incidental stone base in accordance with Section 545 of the *2018 Standard Specifications*.

Measurement and Payment

Incidental Stone Base will be measured and paid in accordance with Article 545-6 of the *2018 Standard Specifications*.

FINAL SURFACE TESTING NOT REQUIRED:

(5-18-04) (Rev. 2-16-16) 610 SP6 R45

Final surface testing is not required on this project in accordance with Section 610-13, *Final Surface Testing and Acceptance*.

ASPHALT CONCRETE SURFACE COURSE COMPACTION:

(7-1-95) (Rev. 8-21-12) SP6 R49R

Compact the asphalt surface course on this project in accordance with Subarticle 610-9 of the *2018 Standard Specifications* and the following provision:

Perform the first rolling with a steel wheel roller followed by rolling with a self-propelled pneumatic tired roller with the final rolling by a steel wheel roller.

ASPHALT CONCRETE PLANT MIX PAVEMENTS:

(2-20-18) (Rev.1-15-19) 610, 1012 SP6 R65

Revise the *2018 Standard Specifications* as follows:

Page 6-14, Table 609-3, LIMITS OF PRECISION FOR TEST RESULTS, replace with the following:

TABLE 609-3
LIMITS OF PRECISION FOR TEST RESULTS

Mix Property	Limits of Precision
25.0 mm sieve (Base Mix)	± 10.0%
19.0 mm sieve (Base Mix)	± 10.0%
12.5 mm sieve (Intermediate & Type P-57)	± 6.0%
9.5 mm sieve (Surface Mix)	± 5.0%

4.75 mm sieve (Surface Mix)	± 5.0%
2.36 mm sieve (All Mixes, except S4.75A)	± 5.0%
1.18 mm sieve (S4.75A)	± 5.0%
0.075 mm sieve (All Mixes)	± 2.0%
Asphalt Binder Content	± 0.5%
Maximum Specific Gravity (G_{mm})	± 0.020
Bulk Specific Gravity (G_{mb})	± 0.030
TSR	± 15.0%
QA retest of prepared QC Gyratory Compacted Volumetric Specimens	± 0.015
Retest of QC Core Sample	± 1.2% (% Compaction)
Comparison QA Core Sample	± 2.0% (% Compaction)
QA Verification Core Sample	± 2.0% (% Compaction)
Density Gauge Comparison of QC Test	± 2.0% (% Compaction)
QA Density Gauge Verification Test	± 2.0% (% Compaction)

Page 6-17, Table 610-1, MIXING TEMPERATURE AT THE ASPHALT PLANT, replace with the following:

TABLE 610-1
MIXING TEMPERATURE AT THE ASPHALT PLANT

Binder Grade	JMF Temperature
PG 58-28; PG 64-22	250 - 290°F
PG 76-22	300 - 325°F

Page 6-17, Subarticle 610-3(C), Job Mix Formula (JMF), lines 38-39, delete the fourth paragraph.

Page 6-18, Subarticle 610-3(C), Job Mix Formula (JMF), line 12, replace "SF9.5A" with "S9.5B".

Page 6-18, Table 610-3, MIX DESIGN CRITERIA, replace with the following:

TABLE 610-3
MIX DESIGN CRITERIA

Mix Type	Design ESALs millions [A]	Binder PG Grade	Compaction Levels G_{mm} @ N_{ini}	Compaction Levels G_{mm} @ N_{des}	Max. Rut Depth (mm)	Volumetric Properties [B] VMA % Min.	VTM %	VFA Min.-Max.	%G_{mm} @ N_{ini}
S4.75A	< 1	64 - 22	6	50	11.5	16.0	4.0 - 6.0	65 - 80	≤ 91.5
S9.5B	0 - 3	64 - 22	6	50	9.5	16.0	3.0 - 5.0	70 - 80	≤ 91.5
S9.5C	3 - 30	64 - 22	7	65	6.5	15.5	3.0 - 5.0	65 - 78	≤ 90.5
S9.5D	> 30	76 - 22	8	100	4.5	15.5	3.0 - 5.0	65 - 78	≤ 90.0
I19.0C	ALL	64 - 22	7	65	-	13.5	3.0 - 5.0	65 - 78	≤ 90.5
B25.0C	ALL	64 - 22	7	65	-	12.5	3.0 - 5.0	65 - 78	≤ 90.5
	Design Parameter					**Design Criteria**			
All Mix Types	Dust to Binder Ratio ($P_{0.075}$ / P_{be})					0.6 - 1.4 [C]			
	Tensile Strength Ratio (TSR) [D]					85% Min. [E]			

A. Based on 20 year design traffic.
B. Volumetric Properties based on specimens compacted to N_{des} as modified by the Department.
C. Dust to Binder Ratio ($P_{0.075}$ / P_{be}) for Type S4.75A is 1.0 - 2.0.
D. NCDOT-T-283 (No Freeze-Thaw cycle required).
E. TSR for Type S4.75A & B25.0C mixes is 80% minimum.

Page 6-19, Table 610-5, BINDER GRADE REQUIREMENTS (BASED ON RBR%), replace with the following:

TABLE 610-5
BINDER GRADE REQUIREMENTS (BASED ON RBR%)

Mix Type	%RBR ≤ 20%	21% ≤ %RBR ≤ 30%	%RBR ≥ 30%
S4.75A, S9.5B, S9.5C, I19.0C, B25.0C	PG 64-22	PG 64-22[A]	PG-58-28
S9.5D, OGFC	PG 76-22[B]	n/a	n/a

A. If the mix contains any amount of RAS, the virgin binder shall be PG 58-28.
B. Maximum Recycled Binder Replacement (%RBR) is 18% for mixes using PG 76-22 binder.

Page 6-20, Table 610-6, PLACEMENT TEMPERATURES FOR ASPHALT, replace with the following:

TABLE 610-6
PLACEMENT TEMPERATURES FOR ASPHALT

Asphalt Concrete Mix Type	Minimum Surface and Air Temperature
B25.0C	35°F
I19.0C	35°F
S4.75A, S9.5B, S9.5C	40°F [A]
S9.5D	50°F

A. For the final layer of surface mixes containing recycled asphalt shingles (RAS), the minimum surface and air temperature shall be 50°F.

Page 6-21, Article 610-8, SPREADING AND FINISHING, lines 34-35, delete the second sentence and replace with the following:

Use an MTV for all surface mix regardless of binder grade on Interstate, US Routes, and NC Routes (primary routes) that have 4 or more lanes and median divided.

Page 6-21, Article 610-8, SPREADING AND FINISHING, lines 36-38, delete the fourth sentence and replace with the following:

Use MTV for all ramps, loops, Y-line that have 4 or more lanes and are median divided, full width acceleration lanes, full width deceleration lanes, and full width turn lanes that are greater than 1000 feet in length.

Page 6-23, Table 610-7, DENSITY REQUIREMENTS, replace with the following:

TABLE 610-7 DENSITY REQUIREMENTS	
Mix Type	**Minimum % G_{mm} (Maximum Specific Gravity)**
S4.75A	85.0 [A]
S9.5B	90.0
S9.5C, S9.5D, I19.0C, B25.0C	92.0

A. Compaction to the above specified density will be required when the S4.75A mix is applied at a rate of 100 lbs/sy or higher.

Page 6-24, Article 610-13, FINAL SURFACE TESTING, lines 35-36, delete the second sentence and replace with the following:

Final surface testing is not required on ramps, loops and turn lanes.

Page 6-26, Subarticle 610-13(A)(1), Acceptance for New Construction, lines 29-30, delete the second sentence and replace with the following:

Areas excluded from testing by the profiler may be tested using a 10-foot straightedge in accordance with Article 610-12.

Page 6-27, Subarticle 610-13(B), Option 2- North Carolina Hearne Straightedge, lines 41-46, delete the eighth and ninth sentence of this paragraph and replace with the following:

Take profiles over the entire length of the final surface travel lane pavement exclusive of structures, approach slabs, paved shoulders, tapers, or other irregular shaped areas of pavement, unless otherwise approved by the Engineer. Test in accordance with this provision all mainline travel lanes, full width acceleration or deceleration lanes and collector lanes.

Page 6-28, Subarticle 610-13(B), Option 2- North Carolina Hearne Straightedge, lines 1-2, delete these two lines.

Page 6-32, Article 610-16 MEASUREMENT AND PAYMENT, replace with the following:

Pay Item	**Pay Unit**
Asphalt Concrete Base Course, Type B25.0C	Ton
Asphalt Concrete Intermediate Course, Type I19.0C	Ton
Asphalt Concrete Surface Course, Type S4.75A	Ton
Asphalt Concrete Surface Course, Type S9.5B	Ton
Asphalt Concrete Surface Course, Type S9.5C	Ton
Asphalt Concrete Surface Course, Type S9.5D	Ton

Page 10-30, Table 1012-1, AGGREGATE CONSENSUS PROPERTIES, replace with the following:

TABLE 1012-1
AGGREGATE CONSENSUS PROPERTIES[A]

Mix Type	Coarse Aggregate Angularity[B]	Fine Aggregate Angularity % Minimum	Sand Equivalent % Minimum	Flat and Elongated 5 : 1 Ratio % Maximum
Test Method	*ASTM D5821*	*AASHTO T 304*	*AASHTO T 176*	*ASTM D4791*
S4.75A; S9.5B	75 / -	40	40	-
S9.5C; I19.0C; B25.0C	95 / 90	45	45	10
S9.5D	100 / 100	45	50	10
OGFC	100 / 100	45	45	10
UBWC	100 / 85	45	45	10

A. Requirements apply to the design aggregate blend.
B. 95 / 90 denotes that 95% of the coarse aggregate has one fractured face and 90% has 2 or more fractured faces.

ADJUSTMENT OF MANHOLES, METER BOXES, AND VALVE BOXES:

(7-1-95) (Rev. 8-21-12) 858 SP8 R97R

The Contractor's attention is directed to Article 858-3 of the *2018 Standard Specifications*. Cast iron or steel fittings will not be permitted for the adjustment of manholes, meter boxes, and valve boxes on this project.

HIGH STRENGTH CONCRETE FOR DRIVEWAYS:

(11-21-00) (Rev. 1-17-12) 848 SP10 R02

Use high early strength concrete for all driveways shown in the plans and as directed by the Engineer. Provide high early strength concrete that meets the requirements of Article 1000-5 of the *2018 Standard Specifications*.

Measurement and payment will be in accordance with Section 848 of the *2018 Standard Specifications*.

4" CONCRETE SIDEWALK W/ WELDED WIRE MESH:

Description

Construct 4" concrete sidewalk with welded wire mesh in accordance with the detail in the plans, the applicable requirements of Section 848 of the *Standard Specifications* and as directed by the Engineer.

Materials

Refer to Article 848-2 of the *Standard Specifications*

Select Material, Class IV – Refer to Section 1016 of the *Standard Specifications*

Geotextile for Soil Stabilization, Type 4 – Refer to Section 1056 of the *Standard Specifications*

Construction

Construct 4" concrete sidewalk with welded wire mesh in accordance with the detail in the plans, the applicable requirements of Section 848 of the *Standard Specifications* and as directed by the Engineer.

In areas deemed necessary by the Engineer, place Select Material, Class IV on Geotextile for Soil Stabilization in accordance with the detail in the plans and the applicable requirements of Section 505-3 of the *Standard Specifications*.

Measurement and Payment

4" Concrete Sidewalk with Welded Wire Mesh will be measured and paid for in units of square yards for the actual number of square yards that have been completed and accepted.

Select Material, Class IV will be measured and paid in tons. Select Material, Class IV will be measured by weighing material in trucks in accordance with Article 106-7. The contract unit price for *Select Material, Class IV* will be full compensation for furnishing, hauling, handling, placing, compacting and maintaining ABC.

Geotextile for Soil Stabilization will be measured and paid in accordance with Article 270-4.

Payment will be made under:

Pay Item	**Pay Unit**
4" Concrete Sidewalk with Welded Wire Mesh	Square Yards
Select Material, Class IV	Ton

BICYCLE/PEDESTRIAN SHARED CROSSING:

Description

Construct bicycle/pedestrian shared crossing as indicated on drawings and directed by the Engineer.

Materials

Refer to Article 848-2 of the *Standard Specifications*

Construction

Construct bicycle/pedestrian shared crossing as indicated on drawings and directed by the Engineer.

Measurement and Payment

Bicycle/Pedestrian Shared Crossing will be measured and paid for in units of linear feet/width of pavement markings that have been completed and accepted.

Payment will be made under:

Pay Item	**Pay Unit**
Bicycle/Pedestrian Shared Crossing Striping	Linear Feet (LF)

PAVEMENT MARKINGS, MARKERS AND DELINEATION

SECTION 1205 PAVEMENT MARKING GENERAL REQUIREMENTS

DESCRIPTION

Furnish, install and remove pavement markings in accordance with the contract.

Pavement-Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, complying with AASHTO M 248, Type S; colors complying with FS TT-P-1952.

Color: As indicated.

PROJECT SPECIAL PROVISIONS

EROSION CONTROL

CLEARING, GRUBBING AND DEBRIS REMOVAL:

The Contractor shall furnish all labor, materials, and equipment required to remove large vegetation within the limits of disturbance and to stockpile all materials to be used as instructed by the Designer.

Description:

A. All requirements of Section 200-Clearing and Grubbing of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018, shall apply, with the following exceptions:

B. The Contractor shall be responsible for any and all damage to trees, shrubs, herbaceous plants and wetlands located beyond the Limit of Disturbance which occurs from his/her operations during the life of the Contract. The Contractor shall fully restore, at his/her own expense, and to the satisfaction of NCDENR, any trees, shrubs, herbaceous plants, and wetlands that have been damaged or destroyed. Wetland restoration shall be in accordance with regulatory agency conditions.

C. Tree removal shall only be allowed as directed by NCDENR. Trees to be removed and grubbing limits shall be flagged in the field and accepted by NCDENR prior to any disturbance.

D. Trees and shrubs which have been removed during this phase of the project shall be chipped or ground on-site, so as to eliminate the need for disposal in the county landfill. Mulch or chip material generated from the site shall only be used within the project boundaries and as directed by the on-site Designer.

Method of Measurement:

The cost of clearing and grubbing will be made incidental to grading.

COIR FIBER WATTLES WITH POLYACRYLAMIDE (PAM):

Description

Coir Fiber Wattles are tubular products consisting of coir fibers (coconut fibers) encased in coir fiber netting. Coir Fiber Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Coir Fiber Wattles are to be placed at locations shown on the plans or as directed. Installation shall follow the detail provided in the plans and as directed. Work includesfurnishing materials, installation of coir fiber wattles, matting installation, PAM application, and removing wattles.

Materials

Coir Fiber Wattle shall meet the following specifications:

100% Coir (Coconut) Fibers	
Minimum Diameter	12 in.

Minimum Density	3.5 lb/ft^3 +/- 10%
Net Material	Coir Fiber
Net Openings	2 in. x 2 in.
Net Strength	90 lbs.
Minimum Weight	2.6 lbs./ft. +/- 10%

Anchors: Stakes shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes a minimum of 2-ft. long with a 2 in. x 2 in. nominal squarecross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of Article 1060-8 of the *Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Polyacrylamide (PAM) shall be applied in powder form and shall be anionic or neutrally charged. Soil samples shall be obtained in areas where the wattles will be placed, and from offsite material used to construct the roadway, and analyzed for the appropriate PAM flocculant to be utilized with each wattle. The PAM product used shall be listed on the North Carolina Department of Environmental Quality Division of Water Resources web site as an approved PAM product for use in North Carolina.

Construction Methods

Coir Fiber Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install coir fiber wattle(s) to a height in ditch so flow will not wash around wattle and scour ditch slopes and according to the detail provided in the plans and as directed. Overlap adjoining sections of wattles a minimum of 6 in.

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with Article 1631-3 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Apply PAM over the lower center portion of the coir fiber wattle where the water is going to flow over at a rate of 2 ounces per wattle, and 1 ounce of PAM on matting on each side of the

wattle. PAM applications shall be done during construction activities after every rainfall event that is equal to or exceeds 0.50 in.

The Contractor shall maintain the coir fiber wattles until the project is accepted or until the wattles are removed, and shall remove and dispose of silt accumulations at the wattles when so directed in accordance with the requirements of Section 1630 of the *Standard Specifications*.

Measurement and Payment
Coir Fiber Wattles will be measured and paid for by the actual number of linear feet of wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattles*.

Matting will be measured and paid for in accordance with Article 1631-4 of the *Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Polyacrylamide(PAM) will be measured and paid for by the actual weight in pounds of PAM applied to the coir fiber wattles. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to apply the *Polyacrylamide(PAM)*.

Payment will be made under:

Pay Item	Pay Unit
Polyacrylamide(PAM)	Pound
Coir Fiber Wattle	Linear Foot

COIR FIBER MAT:

Description
Furnish material, install and maintain coir fiber mat in locations shown on the plans or in locations as directed. Work includes providing all materials, excavating and backfilling, and placing and securing coir fiber mat with stakes, steel reinforcement bars or staples as directed.

Materials

Item	Section
Coir Fiber Mat	1060-14

Anchors: Stakes, reinforcement bars, or staples shall be used as anchors.

Wooden Stakes:

Provide hardwood stakes 12"- 24" long with a 2" x 2" nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving through the coir fiber mat and down into the underlying soil. The other end of the stake needs to have a 1"- 2" long head at the top with

a 1"- 2" notch following to catch and secure the coir fiber mat.

Steel Reinforcement Bars:

Provide uncoated #10 steel reinforcement bars 24" nominal length. The bars shall have a 4" diameter bend at one end with a 4" straight section at the tip to catch and secure the coir fiber mat.

Staples:

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods
Place the coir fiber mat immediately upon final grading. Provide a smooth soil surface free from stones, clods, or debris that will prevent the contact of the mat with the soil. Unroll the mat and apply without stretching such that it will lie smoothly but loosely on the soil surface.

For stream relocation applications, take care to preserve the required line, grade, and cross section of the area covered. Bury the top slope end of each piece of mat in a narrow trench at least 6 in. deep and tamp firmly. Where one roll of matting ends and a second roll begins, overlap the end of the upper roll over the buried end of the second roll so there is a 6 in. overlap. Construct check trenches at least 12 in. deep every 50 ft. longitudinally along the edges of the mat or as directed. Fold over and bury mat to the full depth of the trench, close and tamp firmly. Overlap mat at least 6 in. where 2 or more widths of mat are installed side by side.

Place anchors across the mat at the ends approximately 1 ft. apart. Place anchors along the outer edges and down the center of the mat 3 ft. apart.

Adjustments in the trenching or anchoring requirements to fit individual site conditions may be required.

Measurement and Payment
Coir Fiber Mat will be measured and paid for as the actual number of square yards measured along the surface of the ground over which coir fiber mat is installed and accepted.

No measurement will be made for anchor items. Payment will be made under:

Pay Item	**Pay Unit**
Coir Fiber Mat	Square Yard

<u>COIR FIBER WATTLE:</u>

Description
Coir Fiber Wattles are tubular products consisting of coir fibers (coconut fibers) encased in coir fiber netting. Coir Fiber Wattles are used on slopes or channels to intercept runoff and act as a velocity break. Coir Fiber Wattles are to be placed at locations shown on the plans or as directed.

Installation shall follow the detail provided in the plans and as directed. Work includes furnishing materials, installation of coir fiber wattles, matting installation, and removing wattles.

Materials

Coir Fiber Wattle shall meet the following specifications: 100% Coir (Coconut) Fibers

Minimum Diameter	12 in.
Minimum Density	3.5 lb/ft^3 +/- 10% Net Material Coir Fiber
Net Openings	2 in. x 2 in.
Net Strength	90 lbs.
Minimum Weight	2.6 lbs./ft. +/- 10% Anchors: Stakes shall be used as anchors.

Wooden Stakes:
Provide hardwood stakes a minimum of 2-ft. long with a 2 in. x 2 in. nominal square cross section. One end of the stake must be sharpened or beveled to facilitate driving down into the underlying soil.

Matting shall meet the requirements of Article 1060-8 of the *NCDOT 2018 Standard Specifications*, or shall meet specifications provided elsewhere in this contract.

Provide staples made of 0.125" diameter new steel wire formed into a *u* shape not less than 12" in length with a throat of 1" in width.

Construction Methods

Coir Fiber Wattles shall be secured to the soil by wire staples approximately every 1 linear foot and at the end of each section of wattle. A minimum of 4 stakes shall be installed on the downstream side of the wattle with a maximum spacing of 2 linear feet along the wattle, and according to the detail. Install a minimum of 2 stakes on the upstream side of the wattle according to the detail provided in the plans. Stakes shall be driven into the ground a minimum of 10 in. with no more than 2 in. projecting from the top of the wattle. Drive stakes at an angle according to the detail provided in the plans.

Only install coir fiber wattle(s) to a height in ditch so flow will not wash around wattle and scour ditch slopes and according to the detail provided in the plans and as directed. Overlap adjoining sections of wattles a minimum of 6 in.

Installation of matting shall be in accordance with the detail provided in the plans, and in accordance with Article 1631-3 of the *NCDOT 2018 Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

The Contractor shall maintain the coir fiber wattles until the project is accepted or until the wattles are removed, and shall remove and dispose of silt accumulations at the wattles when so directed in accordance with the requirements of Section 1630 of the *NCDOT 2018 Standard Specifications*.

Measurement and Payment
Coir Fiber Wattles will be measured and paid for by the actual number of linear feet of wattles which are installed and accepted. Such price and payment will be full compensation for all work covered by this section, including, but not limited to, furnishing all materials, labor, equipment and incidentals necessary to install the *Coir Fiber Wattles*.

Matting will be measured and paid for in accordance with Article 1631-4 of the *NCDOT 2018 Standard Specifications*, or in accordance with specifications provided elsewhere in this contract.

Payment will be made under:

Pay Item	**Pay Unit**
Coir Fiber Wattle	Linear Foot

CONCRETE WASHOUT STRUCTURE:
(12-01-15)

Description
Concrete washout structures are enclosures above or below grade to contain concrete waste water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment. Concrete washouts must collect and retain all the concrete washout water and solids, so that this material does not migrate to surface waters or into the ground water. These enclosures are not intended for concrete waste not associated with wash out operations.

The concrete washout structure may include constructed devices above or below ground and or commercially available devices designed specifically to capture concrete waste water.

Materials

Item	**Section**
Temporary Silt Fence	1605

Safety Fence shall meet the specifications as provided elsewhere in this contract.

Geomembrane basin liner shall meet the following minimum physical properties for low permeability; it shall consist of a polypropylene or polyethylene 10 mil think geomembrane. If the minimum setback dimensions can be achieved the liner is not required. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Construction Methods
Build an enclosed earthen berm or excavate to form an enclosure in accordance with the details and as directed.

Install temporary silt fence around the perimeter of the enclosure in accordance with the details and as directed if structure is not located in an area where existing erosion and sedimentation control devices are capable to containing any loss of sediment.

Post a sign with the words "Concrete Washout" in close proximity of the concrete washout area, so it is clearly visible to site personnel.

The construction details for the above grade and below grade concrete washout structures can be found on the following web page link:

http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/soil_water/details/

Alternate details for accommodating concrete washout may be submitted for review and approval.

The alternate details shall include the method used to retain and dispose of the concrete waste water within the project limits and in accordance with the minimum setback requirements. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Maintenance and Removal

Maintain the concrete washout structure(s) to provide adequate holding capacity plus a minimum freeboard of 12 inches. Remove and dispose of hardened concrete and return the structure to a functional condition after reaching 75% capacity.

Inspect concrete washout structures for damage and maintain for effectiveness.

Remove the concrete washout structures and sign upon project completion. Grade the earth material to match the existing contours and permanently seed and mulch area.

Measurement and Payment

Concrete Washout Structure will be paid for per each enclosure installed in accordance with the details. If alternate details are approved then those details will also be paid for per each approved and installed device.

Temporary Silt Fence will be measured and paid for in accordance with Article 1605-5 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling. Payment will be made under:

Pay Item	**Pay Unit**
Concrete Washout Structure	Each

GRAVEL CONSTRUCTION ENTRANCE

The Contractor shall furnish all labor, materials, and equipment required to construct, maintain, and remove all Gravel Construction Entrances and contain sediment within the limits of disturbance and to stockpile all materials to be used as instructed by the Designer.

Description:

A. All requirements of Section 1607-Gravel Construction Entrance of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018, shall apply.

Method of Measurement:
Gravel Construction Entrances shall be measured and paid for as specified in Section 1607-Gravel Construction Entrance of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018.

Basis of Payment:	Pay Unit
Stone for Erosion Control, Standard Size No. 5 or 57	Ton
Geotextile	Square Yard

MINIMIZE REMOVAL OF VEGETATION:

The Contractor shall minimize removal of vegetation at stream banks and disturbed areas within the project limits as directed.

RIP RAP OUTLET PAD:

The Contractor shall furnish all labor, materials, and equipment required to construct, maintain, and remove Rip Rap Outlet Pads within the limits of disturbance and to stockpile all materials to be used as instructed by the Designer.

Description:

A. All requirements of Section 876-Rip Rap of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018, shall apply.

Method of Measurement:
All Rip Rap Outlet Pads shall be measured and paid for as specified in Section 876-Rip Rap of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2012.

Method of Maintenance:
Inspect riprap outlet structures weekly and after significant (1/2 inch or greater) rainfall events to see if any erosion around or below the riprap has taken place, or if stones have been dislodged. Immediately make all needed repairs to prevent further damage.

Basis of Payment:	Pay Unit
Rip Rap, Class B	Ton
Geotextile	Square Yards
Silt Excavation	Cubic Yard

ROCK INLET SEDIMENT TRAP:

The Contractor shall furnish all labor, materials, and equipment required to construct, maintain, and remove devices around catch basins and/or drop inlets to reduce water velocity and contain sediment within the limits of disturbance and to stockpile all materials to be used as instructed by the Designer.

Description:

A. All requirements of Section 1632-Rock Inlet Sediment Trap of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018, shall apply.

Method of Measurement:
Rock Inlet Sediment Traps shall be measured and paid for as specified in Section 1632-Rock Inlet Sediment Trap of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018.

Method of Maintenance:
Rock Inlet Sediment Traps shall be maintained as specified in Section 1630-Construction and Maintenance of Silt Detention Devices of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018.

Basis of Payment:	**Pay Unit**
1/4" Hardware Cloth	Linear Foot
Stone for Erosion Control, Standard Size No. 5 or 57	Ton
Sediment Control Stone , Class A or Class B	Ton
Silt Excavation	Cubic Yard

SAFETY FENCE AND JURISDICTIONAL FLAGGING:

Description

Safety Fence shall consist of furnishing materials, installing and maintaining polyethylene or polypropylene fence along the outside riparian buffer, wetland, or water boundary, or other boundaries located within the construction corridor to mark the areas that have been approved to infringe within the buffer, wetland, endangered vegetation, culturally sensitive areas or water. The fence shall be installed prior to any land disturbing activities.

Interior boundaries for jurisdictional areas noted above shall be delineated by stakes and highly visible flagging.

Jurisdictional boundaries at staging areas, waste sites, or borrow pits, whether considered outside or interior boundaries shall be delineated by stakes and highly visible flagging.

Materials

(A) Safety Fencing

Polyethylene or polypropylene fence shall be a highly visible preconstructed safety fence approved by the Engineer. The fence material shall have an ultraviolet coating.

Either wood posts or steel posts may be used. Wood posts shall be hardwood with a wedge or pencil tip at one end, and shall be at least 5 ft. in length with a minimum nominal 2" x 2" cross section. Steel posts shall be at least 5 ft. in length, and have a minimum weight of 0.85 lb/ft of length.

(B) Boundary Flagging

Wooden stakes shall be 4 feet in length with a minimum nominal 3/4" x 1-3/4" cross section. The flagging shall be at least 1" in width. The flagging material shall be vinyl and shall be orange in color and highly visible.

Construction Methods

No additional clearing and grubbing is anticipated for the installation of this fence. The fence shall be erected to conform to the general contour of the ground.

(A) Safety Fencing

Posts shall be set at a maximum spacing of 10 ft., maintained in a vertical position and hand set or set with a post driver. Posts shall be installed a minimum of 2 ft. into the ground. If hand set, all backfill material shall be thoroughly tamped. Wood posts may be sharpened to a dull point if power driven. Posts damaged by power driving shall be removed and replaced prior to final acceptance. The tops of all wood posts shall be cut at a 30-degree angle. The wood posts may, at the option of the Contractor, be cut at this angle either before or after the posts are erected.

The fence geotextile shall be attached to the wood posts with one 2" galvanized wire staple across each cable or to the steel posts with wire or other acceptable means.

Place construction stakes to establish the location of the safety fence in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications.* No direct pay will be made for the staking of the safety fence. All stakeouts for safety fence shall be considered incidental to the work being paid for as "Construction Surveying", except that where there is no pay item for construction surveying, all safety fence stakeout will be performed by state forces.

The Contractor shall be required to maintain the safety fence in a satisfactory condition for the duration of the project as determined by the Engineer.

(B) Boundary Flagging

Boundary flagging delineation of interior boundaries shall consist of wooden stakes on 25 feet

maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Interior boundaries may be staked on a tangent that runs parallel to buffer but must not encroach on the buffer at any location. Interior boundaries of hand clearing shall be identified with a different colored flagging to distinguish it from mechanized clearing.

Boundary flagging delineation of interior boundaries will be placed in accordance with Article 105-9 or Article 801-1 of the *Standard Specifications*. No direct pay will be made for delineation of the interior boundaries. This delineation will be considered incidental to the work being paid for as *Construction Surveying,* except that where there is no pay item or construction surveying the cost of boundary flagging delineation shall be included in the unit prices bid for the various items in the contract. Installation for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall consist of wooden stakes on 25 feet maximum intervals with highly visible orange flagging attached. Stakes shall be installed a minimum of 6" into the ground. Additional flagging may be placed on overhanging vegetation to enhance visibility but does not substitute for installation of stakes.

Installation of boundary flagging for delineation of all jurisdictional boundaries at staging areas, waste sites, or borrow pits shall be performed in accordance with Subarticle 230-4(B)(5) or Subarticle 802-2(F) of the *Standard Specifications*. No direct pay will be made for this delineation, as the cost of same shall be included in the unit prices bid for the various items in the contract.

The Contractor shall be required to maintain alternative stakes and highly visible flagging in a satisfactory condition for the duration of the project as determined by the Engineer.

Measurement and Payment

Safety Fence will be measured and paid as the actual number of linear feet of polyethylene or polypropylene fence installed in place and accepted. Such payment will be full compensation including but not limited to furnishing and installing fence geotextile with necessary posts and post bracing, staples, tie wires, tools, equipment and incidentals necessary to complete this work.

Payment will be made under:

Pay Item	**Pay Unit**
Safety Fence	Linear Foot

STABILIZATION REQUIREMENTS:

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less

- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

NATIVE GRASS SEEDING AND MULCHING: (East)

Native Grass Seeding and Mulching shall be performed on the disturbed areas of wetlands and riparian areas, and adjacent to Stream Relocation construction within a 50 foot zone on both sides of the stream or depression, measured from top of stream bank or center of depression. The stream bank of the stream relocation shall be seeded by a method that does not alter the typical cross section of the stream bank. Native Grass Seeding and Mulching shall also be performed in the permanent soil reinforcement mat section of preformed scour holes, and in other areas as directed.

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

March 1 - August 31		**September 1 - February 28**	
18#	Creeping Red Fescue	18#	Creeping Red Fescue
6#	Indiangrass	6#	Indiangrass
8#	Little Bluestem	8#	Little Bluestem
4#	Switchgrass	4#	Switchgrass
25#	Browntop Millet	35#	Rye Grain
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Approved Creeping Red Fescue Cultivars: Aberdeen Boreal

Epic Cindy Lou

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

Native Grass Seeding and Mulching shall be performed in accordance with Section 1660 of the *Standard Specifications* and vegetative cover sufficient to restrain erosion shall be installed immediately following grade establishment.

Temporary Seeding

Fertilizer shall be the same analysis as specified for *Seeding and Mulching* and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. German Millet or Browntop Millet shall be used in summer months and rye grain during the remainder of the year. The Engineer will

determine the exact dates for using each kind of seed.

Fertilizer Topdressing
Fertilizer used for topdressing shall be 16-8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

Supplemental Seeding
The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, and the rate of application may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

Mowing
The minimum mowing height shall be 4 inches.

Measurement and Payment
Native Grass *Seeding and Mulching* will be measured and paid for in accordance with Article 1660-8 of the *Standard Specifications*.

RESPONSE FOR EROSION CONTROL:

Description
Furnish the labor, materials, tools and equipment necessary to move personnel, equipment, and supplies to the project necessary for the pursuit of any or all of thefollowing work as shown herein, by an approved subcontractor.

Section	Erosion Control Item	Unit
1605	Temporary Silt Fence	LF
SP	Special Sediment Control Fence	LF/TON
1615	Temporary Mulching	ACR
1620	Seed - Temporary Seeding	LB
1620	Fertilizer - Temporary Seeding	TN
1631	Matting for Erosion Control	SY
SP	Coir Fiber Mat	SY
SP	Coir Fiber Baffles	LF

SP	Permanent Soil Reinforcement Mat	SY
1660	Seeding and Mulching	ACR
1661	Seed - Repair Seeding	LB
1661	Fertilizer - Repair Seeding	TON
1662	Seed - Supplemental Seeding	LB
1665	Fertilizer Topdressing	TON
SP	Safety/Highly Visible Fencing	LF
SP	Response for Erosion Control	EA

Construction Methods
Provide an approved subcontractor who performs an erosion control action as describedin Form 1675. Each erosion control action may include one or more of the above work items.

Measurement and Payment
Response for Erosion Control will be measured and paid for by counting the actual number of times the subcontractor moves onto the project, including borrow and waste sites, and satisfactorily completes an erosion control action described in Form 1675. The provisions of Article 104-5 of the *Standard Specifications* will not apply to this item ofwork.

Payment will be made under:

Pay Item	**Pay Unit**
Response for Erosion Control	Each

<u>Rock Pipe Inlet Sediment Trap:</u>

The Contractor shall furnish all labor, materials, and equipment required to construct, maintain, and remove devices placed around the outside perimeters of pipe structures to reduce water velocity and trap sediment within the limits of disturbance and to stockpile all materials to be used as instructed by the Designer.

Description:

A. All requirements of Section 1635-Rock Pipe Inlet Sediment Trap of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2012, shall apply.

Method of Measurement:
Rock Pipe Inlet Sediment Traps shall be measured and paid for as specified in Section 1635-Rock Pipe Inlet Sediment Trap of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2012.

Basis of Payment:	**Pay Unit**
Stone for Erosion Control, Standard Size No. 5 or 57	Ton
Sediment Control Stone , Class A or Class B	Ton
Silt Excavation	Cubic Yard

STABILIZATION REQUIREMENTS:

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

SEEDING AND MULCHING: (East)

The kinds of seed and fertilizer, and the rates of application of seed, fertilizer, and limestone, shall be as stated below. During periods of overlapping dates, the kind of seed to be used shall be determined. All rates are in pounds per acre.

All Roadway Areas

March 1 - August 31		**September 1 - February 28**	
50#	Tall Fescue	50#	Tall Fescue
10#	Centipede	10#	Centipede
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Waste and Borrow Locations

March 1 – August 31		**September 1 - February 28**	
75#	Tall Fescue	75#	Tall Fescue
25#	Bermudagrass (hulled)	35#	Bermudagrass (unhulled)
500#	Fertilizer	500#	Fertilizer
4000#	Limestone	4000#	Limestone

Note: 50# of Bahiagrass may be substituted for either Centipede or Bermudagrass only upon Engineer's request.

Approved Tall Fescue Cultivars

2nd Millennium	Duster	Magellan	Rendition
Avenger	EndeavorEscalade	Masterpiece	ScorpionShelby
Barlexas		Matador	
Barlexas II	Falcon II, III, IV & V	Matador GT	Signia
Barrera	Fidelity	Millennium	Silverstar
Barrington	Finesse II	Montauk	Southern Choice II
Biltmore	Firebird	Mustang 3	Stetson
Bingo	Focus	Olympic Gold	Tarheel
Bravo	Grande II	Padre	Titan Ltd
Cayenne	Greenkeeper	Paraiso	Titanium
Chapel Hill	Greystone	Picasso	Tomahawk
Chesapeake	Inferno	Piedmont	Tacer
Constitution	Justice	Pure Gold	Trooper
Chipper	Jaguar 3	Prospect	Turbo
Coronado	Kalahari	Quest	Ultimate
Coyote	Kentucky 31	Rebel Exeda	Watchdog
Davinci	Kitty Hawk	Rebel Sentry	Wolfpack
Dynasty	Kitty Hawk 2000	Regiment II	
Dominion	Lexington	Rembrandt	

On cut and fill slopes 2:1 or steeper Centipede shall be applied at the rate of 5 pounds per acre and add 20# of Sericea Lespedeza from January 1 - December 31.

Fertilizer shall be 10-20-20 analysis. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as a 10-20-20 analysis and as directed.

TEMPORARY SEEDING:

Fertilizer shall be the same analysis as specified for *Seeding and Mulching* and applied at the rate of 400 pounds and seeded at the rate of 50 pounds per acre. Sweet Sudan Grass, German Millet or Browntop Millet shall be used in summer months and Rye Grain during the remainder of the year. The Engineer will determine the exact dates for using each kind of seed.

FERTILIZER TOPDRESSING:

Fertilizer used for topdressing on all roadway areas except slopes 2:1 and steeper shall be 10-20-20 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 1-2-2 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 10-20-20 analysis and as directed.

Fertilizer used for topdressing on slopes 2:1 and steeper and waste and borrow areas shall be 16-

8-8 grade and shall be applied at the rate of 500 pounds per acre. A different analysis of fertilizer may be used provided the 2-1-1 ratio is maintained and the rate of application adjusted to provide the same amount of plant food as 16-8-8 analysis and as directed.

SUPPLEMENTAL SEEDING:

The kinds of seed and proportions shall be the same as specified for *Seeding and Mulching*, with the exception that no centipede seed will be used in the seed mix for supplemental seeding. The rate of application for supplemental seeding may vary from 25# to 75# per acre. The actual rate per acre will be determined prior to the time of topdressing and the Contractor will be notified in writing of the rate per acre, total quantity needed, and areas on which to apply the supplemental seed. Minimum tillage equipment, consisting of a sod seeder shall be used for incorporating seed into the soil as to prevent disturbance of existing vegetation. A clodbuster (ball and chain) may be used where degree of slope prevents the use of a sod seeder.

MOWING:

The minimum mowing height on this project shall be 4 inches.

SILT FENCE:

Temporary silt fence shall include the installation, maintenance and removal of the fence.

Material:

A. Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non- biodegradable; in longest lengths possible; fabric including seams with the following minimum average roll lengths.
   1. Average Opening Size: 30 U.S. Std. Sieve, maximum, when tested in accordance with ASTM D 4751
   2. Filtering Efficiency: 85% minimum
   3. Permittivity: 0.05^{-1}, minimum, when tested in accordance with ASTM D-4491
   4. Slurry Flow Rate: 0.3 gal/sq ft/min, minimum
   5. Ultraviolet resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D-4355 after 500 hours of exposure
   6. Tensile Strength: 100 lb-ft minimum, in cross machine direction; when tested in accordance with ASTM D-4632
   7. Elongation: 20 percent maximum, when tested in accordance with ASTM D-4632
   8. Tear Strength: 55 lb-ft minimum, when tested in accordance with ASTM D-4533
   9. Color: Manufacturer's standard, with embedment and fastener lines preprinted
   10. Reinforce fabric with 14 gage wire mesh with 6 inch X 6 inch spacing

B. Silt Fence Posts: Steel U- or T- section, with a minimum mass of 1.33 lb per linear form with projections to facilitate attachment of fabric.

Method of Construction:

A. Ensure that the height of the silt fence does not exceed dimensions shown on the plans

above the ground surface in order to avoid exceeding the amount of impounded water, causing structure failure.

B. Construct the silt fence from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at support post with overlap to the next post.
C. Support silt fence by wire mesh fastened securely to the upslope side of the posts using heavy duty wire staples at least one inch long, or tie wires. Extend wire mesh support to the bottom of the trench.
D. Space posts a maximum of 8 feet apart. Support posts should be driven securely into the ground to a minimum of 18 inches. Staple or wire the silt fence fabric directly to posts.
E. Excavate a trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
F. Backfill the trench with compacted soil or gravel placed over the filter fabric.
G. Do not attach filter fabric to existing trees.
H. Store and handle fabric in accordance with ASTM D-4873
I. Fasten fabric to steel posts using wire, nylon cord, or integral pockets.
J. Inspect silt fence at least once a week and immediately after each rainfall.
K. Should the fabric of silt fence collapse, tear, decompose, or become ineffective, replace it promptly.
L. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.
M. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.
N. Remove silt deposits that exceed one-third of the height of the fence.

Method of Measurement:
The quantity of silt fence to be measured for payment will be the actual number of linear feet of silt fence installed and accepted by the Designer. The payment will include all related material, labor, equipment and related costs.

Method of Maintenance:
Silt fence shall be maintained as specified in Section 1630-Construction and Maintenance of Silt Detention Devices of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018.

Basis of Payment:

Silt Fence	Linear Feet (LF)

SPECIAL SEDIMENT CONTROL FENCE:

The Contractor shall furnish all labor, materials, and equipment required to construct, maintain, and remove special sediment control fence. Place special sediment control fence as shown in the plans or as directed.

Description:
All requirements of Section 1606 Special Sediment Control Fence of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018, shall apply.

Method of Measurement:
Special Sediment Control Fence shall be measured and paid for as specified in Section 1606-Special Sediment Control Fence of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018.

Basis of Payment:	**Pay Unit**
1/4" Hardware Cloth	Linear Foot
Sediment Control Stone, Class A or Class B	Ton
Silt Excavation	Cubic Yard

STOCKPILE AREAS:

The Contractor shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed.

ACCESS AND HAUL ROADS:

At the end of each working day, the Contractor shall install or re-establish temporary diversions or earth berms across access/haul roads to direct runoff into sediment devices. Silt fence sections that are temporarily removed shall be reinstalled across access/haul roads at the end of each working day.

TEMPORARY ROCK SILT CHECK:

The Contractor shall furnish all labor, materials, and equipment required to construct, maintain, and remove devices placed in ditches, diversions, or swales to reduce water velocity and contain sediment within the limits of disturbance and to stockpile all materials to be used as instructed by the Designer.

Description:
A. All requirements of Section 1633-Temporary Rock Silt Checks of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018, shall apply.

Method of Measurement:
Temporary Rock Silt Checks shall be measured and paid for as specified in Section 1633-Temporary Rock Silt Checks of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018.

Method of Maintenance:
Temporary Rock Silt Checks shall be maintained as specified in Section 1630-Construction and Maintenance of Silt Detention Devices of the North Carolina Department of Transportation Standard Specifications for Roads and Structures, dated January 2018.

Basis of Payment	**Pay Unit**
Stone for Erosion Control, Standard Size No. 5 or 57	Ton
Sediment Control Stone , Class A or Class B	Ton
Silt Excavation	Cubic Yard

WASTE AND BORROW SOURCES:

Payment for temporary erosion control measures, except those made necessary by the Contractor's own negligence or for his own convenience, will be paid for at the appropriate contract unit price for the devices or measures utilized in borrow sources and waste areas.

No additional payment will be made for erosion control devices or permanent seeding and mulching in any commercial borrow or waste pit. All erosion and sediment control practices that may be required on a commercial borrow or waste site will be done at the Contractor's expense.

All offsite Staging Areas, Borrow and Waste sites shall be in accordance with "Borrow and Waste Site Reclamation Procedures for Contracted Projects" located at:

http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/ContractedReclamationProcedures.pdf

All forms and documents referenced in the "Borrow and Waste Site Reclamation Procedures for Contracted Projects" shall be included with the reclamation plans for offsite staging areas, and borrow and waste sites.

PROJECT SPECIAL PROVISIONS

TRAFFIC MANAGEMENT

LUMP SUM PAYMENT FOR TRAFFIC CONTROL:
(02/06/2013)

The Contractor shall maintain traffic on Greenville Loop Road from Old Military Road to Circular Drive intersection during construction and shall provide, install and maintain all traffic control devices as shown in the *Roadway Standard Drawings* or as directed by the Engineer.

The lump sum price bid for traffic control shall include but not be limited to providing Signs (portable, stationary, or barricade), which includes detour signing, Changeable Message Signs (CMS), Cones, Skinny Drums and Drums and all labor, tools, equipment and incidentals necessary to furnish, install, maintain and remove traffic control devices when no longer required.

Basis of Payment

Partial payments will be made on each payment estimate based on the following: Fifty percent of the contract lump sum price bid will be paid on the first monthly estimate and the remaining 50% of the contract lump sum price bid will be paid on each subsequent estimate based on the percent of the project completed.

Payment will be made under:

Pay Item	**Pay Unit**
Temporary Traffic Control	Lump Sum

PROJECT SPECIAL PROVISIONS

GEOTECHNICAL

GEOTEXTILE FOR PAVEMENT STABILIZATION: (5-15-18)

Description

Supply and install geotextile for pavement stabilization in accordance with the contract. Geotextile for pavement stabilization may be required above chemically stabilized subgrades or below Class IV subgrade stabilization to prevent pavement cracking at locations shown in the plans and as directed. Define "subbase" as the portion of the roadbed below the Class IV subgrade stabilization.

Materials

Refer to Division 10 of the *Standard Specifications*.

Item	Section
Geotextiles	1056
Select Material, Class IV	1016

Use Class IV select material for Class IV subgrade stabilization. Provide Type 5 geotextile for geotextile for pavement stabilization that meets the following tensile strength requirements in the machine direction (MD) and cross-machine direction (CD):

GEOTEXTILE FOR PAVEMENT STABILIZATION REQUIREMENTS		
Tensile Strength	**Requirement (MARV[A])**	**Test Method**
Tensile Strength @ 5% Strain (MD & CD[A])	1,900 lb/ft	ASTM D4595
Ultimate Tensile Strength (MD & CD[A])	4,800 lb/ft	ASTM D4595

A. MD, CD and MARV per Article 1056-3 of the *Standard Specifications*.

Construction Methods

Geotextile for pavement stabilization may be required at locations shown in the plans and other locations as directed. For locations with ABC on chemically stabilized subgrades, use of geotextile for pavement stabilization will be based on sampling and testing for chemical stabilization. For all other locations, notify the Engineer when the embankment is completed to within 2 ft of subgrade elevation and allow 3 days for the Engineer to determine if geotextile for pavement stabilization is required.

Before placing geotextile for pavement stabilization below Class IV subgrade stabilization, proof roll subbases in accordance with Section 260 of the *Standard Specifications*. Place geotextile for pavement stabilization above chemically stabilized subgrades or below Class IV subgrade stabilization as shown in the plans. Pull geotextiles taut so they are in tension and free of kinks, folds, wrinkles or creases. Install geotextile for pavement stabilization perpendicular to the survey or lane line in the MD and adjacent to each other in the CD as shown in the plans. Continuous geotextiles are required in the MD, i.e., do not splice or overlap geotextiles so seams are parallel to the survey or lane line. Completely cover stabilized subgrades or subbases with geotextile for pavement stabilization. Overlapping geotextiles in the CD is permitted but not required. Overlap

geotextiles in the direction that aggregate will be placed to prevent lifting the edge of the top geotextile. Hold geotextiles in place with wire staples or anchor pins as needed.

Do not damage geotextile for pavement stabilization when placing ABC or Class IV subgrade stabilization. Place and compact ABC in accordance with the contract and *Standard Specifications*. Place, compact and maintain Class IV subgrade stabilization in accordance with Article 505-3 of the *Standard Specifications* for a Type 2 aggregate subgrade. Do not operate heavy equipment on geotextiles any more than necessary to construct base courses or subgrades. Replace any damaged geotextiles to the satisfaction of the Engineer.

Measurement and Payment

Geotextile for Pavement Stabilization will be measured and paid in square yards. Geotextiles will be measured along subgrades or subbases as the square yards of exposed geotextiles installed before placing ABC or Class IV subgrade stabilization. No measurement will be made for overlapping geotextiles. The contract unit price for *Geotextile for Pavement Stabilization* will be full compensation for providing, transporting and installing geotextiles, wire staples and anchor pins.

Class IV Subgrade Stabilization will be measured and paid in accordance with Article 505-4 of the *Standard Specifications*. No measurement will be made for any undercut excavation of fill materials from subbases.

Payment will be made under:

Pay Item	**Pay Unit**
Geotextile for Pavement Stabilization	Square Yard

PROJECT SPECIAL PROVISIONS

UTILITY

Utility Work

Any underground encounter or unusual circumstance that occurs during construction should also be documented by the Contractor with photographs and field measurements along with prompt notification to the Engineer.

If, at any time during construction, it becomes necessary to operate utility valves, Town of Mooresville Public Utilities and Water Department and the Inspector must be contacted prior to operation.

Conflict avoidance, utility construction and/or relocation by others will take place on the project site either prior to or during the Contractor's activity. After project availability date, the Contractor shall coordinate any utility relocation by others in order to avoid any delay in construction progression. Damage to utilities and their accompanying facilities by the Contractor shall be reported immediately to the respective utility owner(s) and the Inspector and arrangements made to repair at the expense of the Contractor.

The Contractor shall limit any interruption of water service to less than 2-hours. The Inspector as well as the residents affected by the interruption of water service shall be notified by the Contractor in writing at least 2 days prior to the interruption. Contractor shall provide written notice to Inspector for approval in advance of delivery. In addition, if any water or sewer services or active lines are accidentally disrupted or accidentally damaged, the Inspector must be contacted immediately. Contractor will be responsible for repair and any separations to property owners resulting from such damages.

No interruption of wastewater flow in the main line or lateral service lines shall be permitted at any time. The Contractor shall take all necessary precautions and actions to prevent overflow and spillage of wastewater, including temporary bypass piping and pumping. Relocation of lateral and service lines shall be performed as needed with no interruption of wastewater flow. Fines, cleanup costs, etc. for any wastewater spills or backups will be the responsibility of the Contractor.

Pits and/or trenches excavated for construction shall be backfilled if practical by the end of the day. If this is impractical, the Contractor shall cover the opening with plate steel, secure the area with minimum 6' fencing to deter access by the public, or install jersey barricades plus traffic control as necessary in accordance with the NCDOT, January 2018, "Roadway Standard Drawings". No separate payment will be made for this work.

Minimum Separations between existing and proposed utilities shall be as specified in the Town of Mooresville Land Development Standards Manual, dated January 2015. If utility separation conflicts occur during construction, the Contractor shall coordinate acceptable adjustments or special treatments with the Engineer and the Town prior to proceeding with work.

It is the responsibility of the contractor to determine the exact location of, and to avoid, all existing utilities and/or facilities within the project limits.

Miscellaneous utility connections shall be terminated with the demolition phase of the project. Town Inspector must verify and give specific approval.

If applicable, the Contractor shall coordinate with all utilities for any necessary utility relocations.

Inspection/Testing

A. The Contractor shall provide access to all construction materials and allow time for the inspection/testing of areas, as needed, by a qualified testing firm and/or the Inspector.

Traffic Control/Site Access

A. All existing driveways, roadways, accesses, etc. shall be maintained and shall be fully accessible at all times. Construction shall not be allowed to interfere with business and/or residential operations. Driveway access suitable for navigation by passenger vehicles must be well established at the end of each work day or whenever construction activity ceases in front of the driveway. In the event a driveway must be temporarily closed for any period of time, the Contractor shall obtain permission first from the Inspector, shall then notify the Town and the property owner/resident affected in writing a minimum of 48 hours in advance to make arrangements for their respective access to the site. Temporary driveways, if necessary, must be provided. There will be no separate payment for this work. Written notice must be approved by the Town prior to being provided to the property owner.

B. Hours of work permitted for certain activities may be restricted in order to insure needed access to properties. Contractor will make all efforts not to hinder the access and mobility of emergency vehicles.

C. Contractor shall be responsible for all traffic control devices and signage per MUTCD and North Carolina Supplement to the MUTCD.

D. Contractor shall place stationary traffic control signs (Advance Warning Signs) at the beginning, end, and at all Y-lines on the project, per MUTCD. All traffic control – stationary and portable – shall be covered under the bid item “Traffic Control” and shall include all equipment, personnel, and related work to insure conformance with MUTCD and NCDOT standards.

STRUCTURAL BRIDGING OVER WATER & SEWER PIPELINES

STEWART

PRODUCTS/MATERIALS

A. Geotextile Fabric. The fabric shall be provided in rolls wrapped with covering for protection from mud, dirt, dust, and debris.
   a. Geotextile Fabric Type A. Geotextile fabric Type A shall be provided for installation at locations indicated on the Drawings and as specified herein. Geotextile Fabric Type A shall be a nonwoven fabric consisting of only continuous chains of polymeric filaments or yarns of polyester formed into a stable network by needle punching. The fabric shall be inert to commonly encountered chemicals; shall be resistant to mildew, rot, ultraviolet light, insects, and rodents; and shall have the indicated properties:

Property	Test Method	Unit	Minimum Average Roll Value *
Fabric Weight	ASTM D3776	oz/yd2	5.7
Grab Strength	ASTM D4632	lb	155
Grab Elongation	ASTM D4632	percent	50
Mullen Burst Strength	ASTM D3786	psi	190
Apparent Opening Size	CW-02215	U.S. Std. Sieve Size	70

   * Minimum average roll value in weakest principal direction.

B. Polyethylene Film: Polyethylene film beneath concrete slabs or slab base course material shall be Product Standard PS17, 6 mil minimum thickness.

C. Granular Materials and Soils: Five classes defined according to properties and characteristics as follows.
   a. Class I - Angular, 25 mm (1-in.) to No.4 (3/16 in.) in size, #57 or #67 graded stone or equivalent regional material from crushed rock, slag, and/or coral.
   b. Class II - Coarse sands and gravels with maximum size of 25 mm (1-in.), including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil Types GW, GP, SW, and SP are included in this class.
   c. Class III - Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil Types GM, GC, SM, and SC are included in this class.
   d. Class IV - Silt, silty clays, and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil Types MH, ML, CH, and CL are included in this class. These materials are not acceptable for bedding, haunching, or initial backfill.
   e. Class V - This class includes the organic soil, OL, OH, PT as well as soils containing frozen earth, debris, rocks, larger than 37.5 mm (1-1/2 in.) in diameter, and other foreign materials. These materials are not acceptable for bedding, haunching, initial backfill, or final backfill.

D. General Fill:
   a. Use soils free of organic matter, refuse, rocks and lumps greater than 4 inches in diameter and other deleterious matter.

b. Fill shall have a liquid limit not greater than 45, and plasticity index not greater than 25.
c. Previously excavated materials complying with the Contract Documents requirements for general fill may be used for general fill.
d. When on-site materials are found unsuitable for use as general fill, provide approved off-site general fill materials. Prior to using off-site material as general fill, furnish submittal for and obtain Engineer's approval of the material proposed for use.
e. General fill material not otherwise specified shall be Class II or III.

E. Granular Fill: Granular fill under floor slabs shall be Class I material.

F. Structural Fill: Fill material placed inside the line of the building foundation or slab shall be Class I or II.

G. Fill Under Pavement: Fill material used beneath pavement and for road shoulders shall be Class II or III.

H. Topsoil: Natural, friable soil free of subsoil, stumps, rocks larger than 2 inches in diameter, weeds, and other material detrimental to plant growth.

I. Concrete: Concrete placed for cradles, thrust blocks, or encasement shall be Class B concrete as specified in Section 03 05 00 - Concrete.

J. Subbase Material: Material shall be naturally- or artificially graded mixture of natural or crushed gravel, crushed stone, or natural or crushed sand. Crushed slag is unacceptable.

K. Drainage Fill: Material shall be washed, uniformly graded mixture of crushed stone, or crushed or uncrushed gravel, with 100 percent passing 1-1/2-inch sieve and not more than 10 percent passing a No. 4 sieve (#57 or #67 stone).

L. Controlled Low Strength Material (CLSM):
a. CLSM shall be self-leveling and self-compacting cementitious material.
i. Cement: Type I or Type II Portland cement complying with ASTM C150/C150M.
ii. Fly Ash Mineral Admixture: Comply with ASTM C618, Class F.
iii. Water: Clean, potable.
iv. Admixtures: Provide admixtures in accordance with product manufacturer's published instructions. Admixtures shall be compatible with each other. Do not use calcium chloride or admixtures containing chloride ions. Use only admixtures that have been tested and approved in the mix designs. Fine Aggregates: ASTM C33/C33M.
b. CLSM Mix:
i. Cement Content: 50 pounds per cubic yard.
ii. Fly Ash Mineral Admixture: 250 pounds per cubic yard.
iii. Fine Aggregate Content: 2910 pounds per cubic yard.
iv. Water Content: 500 pounds per cubic yard.
v. Admixtures shall comply with manufacturer's recommendations for use with CLSM.
vi. Unconfined compressive strength shall be not more than 100 psi.
vii. Adjustment of Mixes.

1. Mix design adjustments may be requested by Contractor when warranted by characteristics of materials, Site conditions, weather, test results, or other, similar circumstances.
2. Submit for Engineer's approval laboratory test data for adjusted mix designs, including compressive strength test results.
3. Implement adjusted mix designs only after Engineer's approval.
4. Adjustments to mix designs shall not result in additional costs to Owner.

SITE AND STRUCTURE EXCAVATION

A. Perform all excavation required to complete the Work as shown, specified, and required. Excavation shall include the removal and replacement of all asphalt, concrete, curb, rock, earth, fences, trees, shrubs, and other materials as applicable within the defined rights-of-way, easements, and limits of disturbance indicated.

B. Excavation Protection: Under all other conditions, excavations shall be sloped and benched, shielded, or shored and braced. Provide and maintain excavation protection system(s) in accordance with submittals accepted by Engineer.

C. All areas of the site shall be graded and maintained at all times to prevent surface runoff from draining into the excavations, and to prevent ponding of water therein.

D. Excavation shall be accomplished in accordance with the grades and lines as established by the Engineer and as required by the work to be performed. Exercise care to prevent undercutting lower than the required subgrades. When excavations are made below required grades without written order of Engineer, fill such excavations with compacted select fill material, as directed by Engineer, at Contractor's expense.

E. Extend excavations sufficiently on each side of foundation slabs, wet wells, manholes, valve vaults, and similar construction to allow setting of forms, installation of shoring and bracing, and the safe sloping of banks, as necessary.

F. General Site Subgrades:
   a. Subgrades shall be firm, dense, and thoroughly compacted and consolidated; shall be free from mud, muck, and other soft or unsuitable materials; and shall remain firm and intact under all construction operations. Subgrades that are otherwise solid but become soft or mucky on top due to construction operations shall be reinforced with select fill. Finished elevation of stabilized subgrades shall not be above subgrade elevations shown.
   b. If, in Engineer's opinion, subgrade becomes softened or mucky because of construction delays, failure to dewater properly, or other cause within Contractor's control, subgrade shall be excavated to firm material, trimmed, and backfilled with select fill material at Contractor's expense.
   c. Upon completion of site preparation and excavation, scarify to a depth of 12-inches and compact as specified. For areas to receive fill, the compacted subgrade shall be scarified to a depth of 4-inches prior to placing the fill.

G. Proof-rolling Subgrades:
   a. Prior to placing fill or constructing pavements or slabs-on-grade, proof-roll the subgrade surface with sufficient proof-rolling apparatus. Before starting proofrolling, submit to and obtain acceptance from Engineer of proof-rolling apparatus and procedure to be used.
   b. Proof-rolling operations shall be made in the presence of Engineer. Notify Engineer in advance of start of proof-rolling operations.
   c. Subgrades displaying pronounced elasticity or deformation, deflection, cracking, or rutting shall be stabilized as directed by Engineer. Unsuitable materials shall be undercut to the depth directed by Engineer and replaced with select fill material. Other suitable stabilization methods may be directed by Engineer.

H. Excavated Materials to be Used as Fill:
   a. All materials from excavation, considered as suitable by the Engineer, shall be used as fill wherever required, and the Contractor shall arrange his work so that this usage of excavated materials will be possible.
   b. Stockpile excavated materials that are acceptable for use as fill.
   c. As excavation proceeds, keep stockpiles of excavated materials suitable for use as fill separate from unsuitable materials and waste materials.
   d. Place, grade, and shape stockpiles for proper drainage.
   e. Locate and retain soil materials away from edge of excavations.
   f. Dispose of excess soil material and waste materials.
   g. Stockpiled excavated soils for use as select fill or general fill shall be tested and classified by laboratory as on-Site select fill or on-Site general fill. Perform required quality assurance testing for material verification on stockpiled materials as soon as possible to demonstrate compliance of excavated materials.

SITE AND STRUCTURE FILL AND COMPACTION

A. Provide and compact all fill required for the finished grades as shown on the drawings.

B. Place fill in excavations as promptly as progress of the Work allows, but not until completing the following:
   a. Engineer's authorization after observation of construction below finish grade, including damp-proofing, waterproofing, perimeter insulation, and similar Work.
   b. Inspection, testing, approval and recording of locations of underground facilities.
   c. Removal of concrete formwork.
   d. Removal of shoring and bracing, and filling of voids with satisfactory materials.
   e. Removal of trash and debris.
   f. Permanent or temporary horizontal bracing is in place on horizontally supported walls.
   g. Field testing of tanks, underground facilities including piping and conduits, and water-retaining structures.

C. Fill that includes organic materials, debris, roots, trash, stones, or other unacceptable material shall be removed and replaced with approved fill material.

D. Borrow: The Contractor will supply all borrow necessary and will provide all labor and equipment necessary to dig and haul such borrow.

E. E. Placement:

a. Place fill to the grades shown or indicated. Bring up evenly on all sides fill around structures and underground facilities.
b. Fill shall be spread in successive layers of loose material not more than 8 inches in depth. Each layer shall be spread uniformly by motor grader or other approved device and rolled with an approved tamping or 3-wheeled power roller until thoroughly compacted to 90 percent of maximum density obtained at optimum moisture content, as determined by the AASHTO Standard Method T-180.
c. Fill areas shall be undercut, and proof rolled as directed by Engineer.
d. Place fill materials at moisture content and density as specified in Table 31 23 34- A of this Section and this Article's requirements on compaction density. Furnish and use equipment capable of adding measured amounts of water to the fill materials to bring fill materials to a condition within required moisture content range. Furnish and use equipment capable of disking, aerating, and mixing the fill materials to ensure reasonable uniformity of moisture content throughout the fill materials, and to reduce moisture content of borrow materials by air drying, when necessary. When subgrade or lift of fill materials requires moisture-conditioning before compaction, fill material shall be sufficiently mixed or worked on the subgrade to ensure uniform moisture content throughout the lift of material to be compacted. Materials at moisture content in excess of specified limit shall be dried by aeration or stockpiled for drying.
e. Perform compaction with equipment suitable for the type of fill material placed. Select and use equipment capable of providing the minimum density required. Use lightweight or hand operated compaction equipment within horizontal distance of 10 feet from the wall of completed, below-grade structures. Furnish and use equipment capable of compacting in restricted areas next to structures and around piping and underground facilities. Effectiveness of the equipment selected by Contractor shall be tested at start of compacted fill Work by constructing a small section of fill within the area where fill will be placed. If tests on the test section of fill indicate that required compaction is not obtained, do one or more of the following: increase the amount of coverage, decrease the lift thicknesses, or use different compactor equipment.
f. Place fill materials in horizontal, loose lifts, not exceeding specified uncompacted thickness. Place fill in a manner ensuring uniform lift thickness after placing. Mechanically compact each lift, by not less than two complete coverages of the compactor. One coverage is defined as the conditions reached when all portions of the fill lift have been subjected to the direct contact of compactor's compacting surface. Compaction of fill materials by inundation with water is unacceptable.
g. Do not place fill materials when standing water is present on surface of the area where fill will be placed. Do not compact fill when standing water is present on the fill to be compacted. Do not place or compact fill in a frozen condition or on top of frozen material. Fill containing organic materials or other unacceptable material previously described shall be removed and replaced prior to compaction.
h. If required densities are not obtained because of improper control of placement or compaction procedures, or because of inadequate or improperly-functioning compaction equipment, Contractor shall perform all work required to provide the required densities. Such work shall include, at no additional cost to Owner, complete removal of unacceptable fill areas and replacement and re-compaction until acceptable fill is provided.

i. Repair, at Contractor's expense, observed or measured settlement. Make repairs and replacements as required within 30 days after being so advised by Engineer.
j. When any portion of the fill is constructed on an old roadbed, the existing surfaces shall be scarified and manipulated as directed by the Engineer in order that, when compacted, it shall have a uniform density. Fills shall be shaped and maintained at all times during their construction to prevent an accumulation of standing water in the event of rain.

F. Fill Against Concrete:
   a. Placing fill against concrete below finished grade is not allowed until the concrete has attained its specified strength, as determined by duration of concrete curing and testing of field-cured concrete cylinders. Requirements for strength and curing time are in Section 03 05 00 – Concrete.
   b. Backfill structural foundation units as soon as practicable, after concrete has gained sufficient strength to avoid damage, to avoid ponding of surface water and accumulation of debris.
   c. Where fill is placed against waterproofed surface, exercise care that waterproofing material is not damaged.

G. Fill in Electrical Ductbank Trenches: Provide general fill for full depth of electrical ductbank trench, below and above electrical ductbank. Where one ductbank passes beneath another pipe or ductbank, provide select fill to the elevation of the bottom of upper ductbank or pipe, as applicable. Placing and compacting fill in electrical ductbank trenches shall comply with Type S trench construction requirements.

H. Pavement:
   a. Compact the subgrade and fill material beneath paved areas and shoulders to a minimum 98 percent ASTM D698 maximum density at optimum moisture content.
   b. Place 1-½ inches of temporary asphalt concrete pavement immediately after filling excavations in paved roadways and other paved areas that will remain for permanent use.
   c. Maintain surface of paved area over the fill in good and safe condition during progress of the Work, and promptly fill depressions over and adjacent to the fill area caused by settlement of fill.
   d. Permanent replacement pavement shall be equal to that of the existing roadways, unless otherwise shown or specified.

I. Subbase Placement:
   a. Provide subbase material where shown to the limits shown or indicated.
   b. Place subbase material in compacted lifts not exceeding depth of 6-inches each.

J. Drainage Fill Placement:
   a. Provide drainage fill material where shown to the limits shown or indicated.
   b. Place drainage fill material in compacted layers of uniform thickness not exceeding depth of 6-inches each. Compact lifts of drainage fill using suitable compaction equipment.

K. Granular Fill
   a. Placement Place granular fill on compacted subgrade.

L. Compaction Density Requirements:
   a. Compaction required for all types of fills shall be in accordance with Table 31 23 34-A of this Section. Moisten material or aerate the material as necessary to provide the moisture content that will facilitate obtaining the required compaction.
   b. Fill shall be wetted and thoroughly mixed to achieve optimum moisture content plus-or-minus 3-percent, with the following exceptions: On-site clayey soils: Optimum to plus 3-percent.
   c. Replace natural, undisturbed soils or compacted soil subsequently disturbed or removed by construction operations with materials compacted as indicated in Table 31 23 34-A.
   d. Field quality control testing for density; to verify that specified density was obtained, will be performed during each day of compaction Work. Responsibility for field quality control testing is specified in the "Field Quality Control" Article in Part 3.
   e. When field quality control testing indicates unsatisfactory compaction, provide additional compaction necessary to obtain the specified compaction. Perform additional compaction Work at no additional cost to Owner until specified compaction is obtained. Such work includes complete removal of unacceptable (as determined by Engineer) fill areas and replacement and re-compaction until acceptable fill is provided in accordance with the Contract Documents.

TABLE 31 23 34-A

REQUIRED MINIMUM DENSITY

Material	Percent Compaction (ASTM D698)	Uncompacted Lift (inches)
General Fill		
More than 5-feet below final grade	100	8
Less than 5-feet below final grade	95	8
Select Fill		
Below concrete slabs or mats	100	8
Below pavement and sidewalks	100	12
Behind concrete walls	95	8
Subbase Material		
Below pavement and sidewalks	100	12
All other locations	100	8
Drainage Fill	N/A	6
Structural Fill	98	-
Granular Fill	100	-
Landscaped Areas		
Subgrade	98	-
Topsoil	85	

M. Replacement of Unacceptable Excavated Materials: In cases where over-excavation to replace unacceptable soil materials is required, backfill the excavation to required subgrade with select fill material and thoroughly compact in accordance with Table 31 23 34-A and the associated "Compaction Density Requirements" in this Article. Slope the sides of excavation in accordance with the maximum inclinations specified for each structure location.

FIELD QUALITY CONTROL

A. Field inspection, sampling and testing shall be performed.

B. Site Tests: Owner will employ an independent testing laboratory to perform field quality control testing.
   a. Testing Laboratory Scope:
      i. Perform field moisture content and density tests to ensure that the specified compaction of embedment and fill materials has been obtained.
      ii. Perform tests of actual unconfined compressive strength or bearing tests on structure subgrades.
      iii. Report results of each test to CFPUA, Engineer, and Contractor.
   b. Authority and Duties of Testing Laboratory:
      i. Technicians representing the testing laboratory shall inspect the materials in the field, perform testing, and report findings. When materials furnished or the Work performed does not comply, technician will direct attention of CFPUA, Engineer, and Contractor to such failure.
      ii. Technician will not act as foreman or perform other duties for Contractor. Work will be checked as it progresses, but failure to detect defective Work or non-complying materials shall not in any way prevent later rejection when defect is discovered. Technicians are not authorized to revoke, alter, relax, enlarge, or release requirements, or to approve any portion of the Work.
   c. Responsibilities and Duties of Contractor:
      i. To facilitate testing laboratory, Contractor shall advise testing laboratory at least 2-days in advance of excavating filling operations to allow for assignment of personnel for field quality control testing.
      ii. It shall be Contractor's responsibility to control construction operations to accomplish the specified compaction for fill and trench construction and confirm tests verify that Contractor has complied and is complying relative to compaction control.
      iii. Contractor shall demonstrate adequacy of compaction equipment and procedures before exceeding one or more of the following quantities of earthwork:
         1. 200 linear feet of trench embedment and backfill.
            a. 10 cubic yards of select fill.
            b. 100 cubic yards of general fill.
            c. 50 cubic yards of subbase material.
            d. Each test location shall include tests for each layer, type, or class of fill to finish grade.
         2. Testing laboratory will inspect and indicate acceptable subgrades and fill layers using the interval/units listed below as a guide. Actual inspection and testing interval/units will vary based on specific project conditions.

3. Trenches for pipelines and underground facilities (including buried ductbanks):
    a. In Open Fields: Two locations every 1,000 linear feet.
    b. Along Dirt or Gravel Roads or Off Traveled Right-of-Way: Two locations every 500 linear feet.
    c. Crossing Paved Roads: Two locations along each crossing.
    d. Under Pavement Cuts or Within Two Feet of Pavement Edges: One location every 400 linear feet.
4. Footing Subgrade: For each stratum of soil on which footings will be placed, perform not less than one test to verify required design bearing capacities. Subsequent verification and approval of each footing subgrade may be based on a visual comparison of each subgrade with related tested strata, when acceptable to Engineer.
5. For Select Fill: On 30-foot intervals on all sides of the structure for every compacted lift, but not less than one per lift on each side of the structure for structures less than 60 feet long on a side.
6. For General Fill: One per 1,000 square feet on every compacted lift.
7. Subbase Material: One per 1,000 square feet on every compacted lift.

d. Test reports shall be provided to Owner, Engineer and Contractor.
e. If testing laboratory reports or inspections indicate subgrade, fills, or bedding compaction below specified density, Contractor shall remove unacceptable materials as necessary and replace with specified materials and provide additional compaction at Contractor's expense until subgrades, bedding, and fill are acceptable.

See Detail in Plans.

Payment will be made under:
STRUCTURAL BRIDGING OVER WATER & SEWER PIPELINES..... EA

PRESSURE MAIN AND STORM DRAIN CROSSING

See Detail in Plans.

Payment will be made under:
PRESSURE MAIN AND STORM DRAIN
CROSSING..... EA

ALLOWANCE FOR WATER AND SEWER SERVICE RELOCATIONS/RECONNECTIONS

Contractor to coordinate with CFPUA and Owner on all service relocations/reconnections.

See "Allowance" line item in Bid Form for Measurement and Payment terms.

Payment will be made under:
ALLOWANCE FOR WATER AND SEWER
SERVICE
RELOCATIONS/RECONNECTIONS.....LS

PROJECT SPECIAL PROVISION

(10-18-95) (Rev. 3-21-17) Z-1

PERMITS

The Contractor's attention is directed to the following permits, which have been issued to the Department of Transportation by the authority granting the permit.

PERMIT	AUTHORITY GRANTING THE PERMIT
Placement of Dredged or Fill Materials within Waters of the US (404) – SAW-2022-00075; No Waters of the US – Approved Jurisdictional Determination, Signed	U.S. Army Corps of Engineers, Wilmington District
Water Quality (401)	Division of Environmental Management, DEQ State of North Carolina
Erosion & Sediment Control – Land Quality	Division of Environmental Management, DEQ State of North Carolina
NCDOT Encroachment Agreement - Intersection Plan (Oleander)	North Carolina Department of Transportation (NCDOT)

The Contractor shall comply with all applicable permit conditions during construction of this project. Those conditions marked by * are the responsibility of the Department and the Contractor has no responsibility in accomplishing those conditions.

Agents of the permitting authority will periodically inspect the project for adherence to the permits.

The Contractor's attention is also directed to Articles 107-10 and 107-13 of the *2018 Standard Specifications* and the following:

Should the Contractor propose to utilize construction methods (such as temporary structures or fill in waters and/or wetlands for haul roads, work platforms, cofferdams, etc.) not specifically identified in the permit (individual, general, or nationwide) authorizing the project it shall be the Contractor's responsibility to coordinate with the Engineer to determine what, if any, additional permit action is required. The Contractor shall also be responsible for initiating the request for the authorization of such construction method by the permitting agency. The request shall be submitted through the Engineer. The Contractor shall not utilize the construction method until it is approved by the permitting agency. The request normally takes approximately 60 days to process; however, no extensions of time or additional compensation will be granted for delays resulting from the Contractor's request for approval of construction methods not specifically identified in the permit.

Where construction moratoriums are contained in a permit condition which restricts the Contractor's activities to certain times of the year, those moratoriums will apply only to the portions of the work taking place in the restricted waters, wetlands or buffer zones, provided that activities outside those areas is done in such a manner as to not affect the restricted waters, wetlands or buffer zones.

STANDARD SPECIAL PROVISION
AVAILABILITY OF FUNDS – TERMINATION OF CONTRACTS

(5-20-08) Z-2

General Statute 143C-6-11. (h) Highway Appropriation is hereby incorporated verbatim in this contract as follows:

(h) Amounts Encumbered. – Transportation project appropriations may be encumbered in the amount of allotments made to the Department of Transportation by the Director for the estimated payments for transportation project contract work to be performed in the appropriation fiscal year. The allotments shall be multiyear allotments and shall be based on estimated revenues and shall be subject to the maximum contract authority contained in *General Statute 143C-6-11(c)*. Payment for transportation project work performed pursuant to contract in any fiscal year other than the current fiscal year is subject to appropriations by the General Assembly. Transportation project contracts shall contain a schedule of estimated completion progress, and any acceleration of this progress shall be subject to the approval of the Department of Transportation provided funds are available. The State reserves the right to terminate or suspend any transportation project contract, and any transportation project contract shall be so terminated or suspended if funds will not be available for payment of the work to be performed during that fiscal year pursuant to the contract. In the event of termination of any contract, the contractor shall be given a written notice of termination at least 60 days before completion of scheduled work for which funds are available. In the event of termination, the contractor shall be paid for the work already performed in accordance with the contract specifications.

Payment will be made on any contract terminated pursuant to the special provision in accordance with Subarticle 108-13(D) of the *2018 Standard Specifications*.

STANDARD SPECIAL PROVISION
NCDOT GENERAL SEED SPECIFICATION FOR SEED QUALITY

(5-17-11) Z-3

Seed shall be sampled and tested by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory. When said samples are collected, the vendor shall supply an independent laboratory report for each lot to be tested. Results from seed so sampled shall be final. Seed not meeting the specifications shall be rejected by the Department of Transportation and shall not be delivered to North Carolina Department of Transportation warehouses. If seed has been delivered it shall be available for pickup and replacement at the supplier's expense.

Any re-labeling required by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory, that would cause the label to reflect as otherwise specified herein shall be rejected by the North Carolina Department of Transportation.

Seed shall be free from seeds of the noxious weeds Johnsongrass, Balloonvine, Jimsonweed, Witchweed, Itchgrass, Serrated Tussock, Showy Crotalaria, Smooth Crotalaria, Sicklepod, Sandbur, Wild Onion, and Wild Garlic. Seed shall not be labeled with the above weed species on the seed analysis label. Tolerances as applied by the Association of Official Seed Analysts will NOT be allowed for the above noxious weeds except for Wild Onion and Wild Garlic.

Tolerances established by the Association of Official Seed Analysts will generally be recognized. However, for the purpose of figuring pure live seed, the found pure seed and found germination percentages as reported by the North Carolina Department of Agriculture and Consumer Services, Seed Testing Laboratory will be used. Allowances, as established by the NCDOT, will be recognized for minimum pure live seed as listed on the following pages.

The specifications for restricted noxious weed seed refers to the number per pound as follows:

Restricted Noxious **Weed**	Limitations per Lb. Of Seed	Restricted Noxious **Weed**	Limitations per Lb. of Seed
Blessed Thistle	4 seeds	Cornflower (Ragged Robin)	27 seeds
Cocklebur	4 seeds	Texas Panicum	27 seeds
Spurred Anoda	4 seeds	Bracted Plantain	54 seeds
Velvetleaf	4 seeds	Buckhorn Plantain	54 seeds
Morning-glory	8 seeds	Broadleaf Dock	54 seeds
Corn Cockle	10 seeds	Curly Dock	54 seeds
Wild Radish	12 seeds	Dodder	54 seeds
Purple Nutsedge	27 seeds	Giant Foxtail	54 seeds
Yellow Nutsedge	27 seeds	Horsenettle	54 seeds
Canada Thistle	27 seeds	Quackgrass	54 seeds
Field Bindweed	27 seeds	Wild Mustard	54 seeds
Hedge Bindweed	27 seeds		

Seed of Pensacola Bahiagrass shall not contain more than 7% inert matter, Kentucky Bluegrass, Centipede and Fine or Hard Fescue shall not contain more than 5% inert matter whereas a maximum of 2% inert matter will be allowed on all other kinds of seed. In addition, all seed shall not contain more than 2% other crop seed nor more than 1% total weed seed. The

germination rate as tested by the North Carolina Department of Agriculture shall not fall below 70%, which includes both dormant and hard seed. Seed shall be labeled with not more than 7%, 5% or 2% inert matter (according to above specifications), 2% other crop seed and 1% total weed seed.

Exceptions may be made for minimum pure live seed allowances when cases of seed variety shortages are verified. Pure live seed percentages will be applied in a verified shortage situation. Those purchase orders of deficient seed lots will be credited with the percentage that the seed is deficient.

FURTHER SPECIFICATIONS FOR EACH SEED GROUP ARE GIVEN BELOW:

Minimum 85% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 83% pure live seed will not be approved.

Sericea Lespedeza
Oats (seeds)

Minimum 80% pure live seed; maximum 1% total weed seed; maximum 2% total other crop; maximum 144 restricted noxious weed seed per pound. Seed less than 78% pure live seed will not be approved.

Tall Fescue (all approved varieties)
Kobe Lespedeza
Korean Lespedeza
Weeping Lovegrass
Carpetgrass
Bermudagrass
Browntop Millet
German Millet – Strain R
Clover – Red/White/Crimson

Minimum 78% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 76% pure live seed will not be approved.

Common or Sweet Sundangrass

Minimum 76% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 restricted noxious weed seed per pound. Seed less than 74% pure live seed will not be approved.

Rye (grain; all varieties)
Kentucky Bluegrass (all approved varieties)
Hard Fescue (all approved varieties)
Shrub (bicolor) Lespedeza

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 144 noxious weed seed per pound. Seed less than 70% pure live seed will not be approved.

Centipedegrass
Crownvetch
Pensacola Bahiagrass
Creeping Red Fescue
Japanese Millet
Reed Canary Grass
Zoysia

Minimum 70% pure live seed; maximum 1% total weed seed; maximum 2% total other crop seed; maximum 5% inert matter; maximum 144 restricted noxious weed seed per pound.

Barnyard Grass
Big Bluestem
Little Bluestem
Bristly Locust
Birdsfoot Trefoil
Indiangrass
Orchardgrass
Switchgrass
Yellow Blossom Sweet Clover

STANDARD SPECIAL PROVISION

ERRATA

(10-16-18) (Rev.2-16-21) Z-4

Revise the *2018 Standard Specifications* as follows:

Division 6

Page 6-7, Article 609-1 DESCRIPTION, line 29, replace article number "609-10" with "609-9".

Division 7

Page 7-27, Article 725-1 MEASUREMENT AND PAYMENT, line 4, replace article number "725-1" with "724-4".

Page 7-28, Article 725-1 MEASUREMENT AND PAYMENT, line 10, replace article number "725-1" with "725-3".

Division 10

Page 10-78, Article 1056-4 GEOTEXTILES, TABLE 1056-1, Permittivity, Type 2, replace "Table 6[D]" with "Table 7[D]" and **Permittivity, Type 3[B],** replace "Table 7[D]" with "Table 8[D]".

Page 10-121, Article 1076-7, REPAIR OF GALVANIZING, line 8, replace article number "1080-9" with "1080-7".

Page 10-162, Article 1080-50 PAINT FOR VERTICAL MARKERS, line 1, replace article number "1080-50" with "1080-10".

Page 10-162, Article 1080-61 EPOXY RESIN FOR REINFORCING STEEL, line 5, replace article number "1080-61" with "1080-11".

Page 10-162, Article 1080-72 ABRASIVE MATERIALS FOR BLAST CLEANING STEEL, line 22, replace article number "1080-72" with "1080-12".

Page 10-163, Article 1080-83 FIELD PERFORMANCE AND SERVICES, line 25, replace article number "1080-83" with "1080-13".

Division 17

Page 17-15, Article 1715-4 MEASUREMENT AND PAYMENT, lines 42-44, replace the second sentence with the following:

An example is an installation of a single 1.25 inch HDPE conduit would be paid as:

Directional Drill (1)(1.25″) Linear Foot

STANDARD SPECIAL PROVISION

PLANT AND PEST QUARANTINES
(Imported Fire Ant, Gypsy Moth, Witchweed, Emerald Ash Borer, Guava Root Knot Nematode, And Other Noxious Weeds)

(3-18-03) (Rev. 5-21-19) Z-04a

Within Quarantined Area

This project may be within a county regulated for plant and/or pests. If the project or any part of the Contractor's operations is located within a quarantined area, thoroughly clean all equipment prior to moving out of the quarantined area. Comply with federal/state regulations by obtaining a certificate or limited permit for any regulated article moving from the quarantined area.

Originating in a Quarantined County

Obtain a certificate or limited permit issued by the N.C. Department of Agriculture/United States Department of Agriculture. Have the certificate or limited permit accompany the article when it arrives at the project site.

Contact

Contact the N.C. Department of Agriculture/United States Department of Agriculture at 1-800-206-9333, 919-707-3730, or *https://www.ncagr.gov/plantindustry/Plant/quaran/table2.htm* to determine those specific project sites located in the quarantined area or for any regulated article used on this project originating in a quarantined county.

Regulated Articles Include

1. Soil, sand, gravel, compost, peat, humus, muck, and decomposed manure, separately or with other articles. This includes movement of articles listed above that may be associated with cut/waste, ditch pulling, and shoulder cutting.
2. Plants with roots including grass sod.
3. Plant crowns and roots.
4. Bulbs, corms, rhizomes, and tubers of ornamental plants.
5. Hay, straw, fodder, and plant litter of any kind.
6. Clearing and grubbing debris.
7. Used agricultural cultivating and harvesting equipment.
8. Used earth-moving equipment.
9. Any other products, articles, or means of conveyance, of any character, if determined by an inspector to present a hazard of spreading imported fire ant, gypsy moth, witchweed, emerald ash borer, guava root knot nematode, or other noxious weeds.

STANDARD SPECIAL PROVISION

MINIMUM WAGES

(7-21-09) Z-5

FEDERAL: The Fair Labor Standards Act provides that with certain exceptions every employer shall pay wages at the rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

STATE: The North Carolina Minimum Wage Act provides that every employer shall pay to each of his employees, wages at a rate of not less than SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

The minimum wage paid to all skilled labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

The minimum wage paid to all intermediate labor employed on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

The minimum wage paid to all unskilled labor on this contract shall be SEVEN DOLLARS AND TWENTY FIVE CENTS ($7.25) per hour.

This determination of the intent of the application of this act to the contract on this project is the responsibility of the Contractor.

The Contractor shall have no claim against the Department of Transportation for any changes in the minimum wage laws, Federal or State. It is the responsibility of the Contractor to keep fully informed of all Federal and State Laws affecting his contract.

STANDARD SPECIAL PROVISION

TITLE VI AND NONDISCRIMINATION:

(6-28-77)(Rev 6/19/2018) Z-6

Revise the *2018 Standard Specifications* as follows:

Replace Article 103-4(B) with the following:

The North Carolina Department of Transportation is committed to carrying out the U.S. Department of Transportation's policy of ensuring nondiscrimination in the award and administration of contracts.

The provisions of this section related to United States Department of Transportation (US DOT) Order 1050.2A, Title 49 Code of Federal Regulations (CFR) part 21, 23 United States Code (U.S.C.) 140 and 23 CFR part 200 (or 49 CFR 303, 49 U.S.C. 5332 or 49 U.S.C. 47123) are applicable to all North Carolina Department of Transportation (NCDOT) contracts and to all related subcontracts, material supply, engineering, architectural and other service contracts, regardless of dollar amount. Any Federal provision that is specifically required not specifically set forth is hereby incorporated by reference.

(1) **Title VI Assurances (USDOT Order 1050.2A, Appendix A)**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

(a) Compliance with Regulations

The contractor (hereinafter includes consultants) shall comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.

(b) Nondiscrimination

The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor shall not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.

(c) Solicitations for Subcontractors, Including Procurements of Materials and Equipment

In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Nondiscrimination on the grounds of race, color, or national origin.

(d) Information and Reports

The contractor shall provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor shall so certify to the Recipient or the FHWA, as appropriate, and shall set forth what efforts it has made to obtain the information.

(e) Sanctions for Noncompliance:

In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it and/or the FHWA may determine to be appropriate, including, but not limited to:

(i) Withholding payments to the contractor under the contract until the contractor complies; and/or

(ii) Cancelling, terminating, or suspending a contract, in whole or in part.

(f) Incorporation of Provisions

The contractor shall include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor shall take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

(2) **Title VI Nondiscrimination Program (23 CFR 200.5(p))**

The North Carolina Department of Transportation (NCDOT) has assured the USDOT that, as a condition to receiving federal financial assistance, NCDOT will comply with Title VI of the Civil Rights Act of 1964 and all requirements imposed by Title 49 CFR part 21 and related nondiscrimination authorities to ensure that no person shall, on the ground of race, color, national origin, limited English proficiency, sex, age, or disability (including religion/creed or income-level, where applicable), be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any programs, activities, or services conducted or funded by NCDOT. Contractors and other organizations under contract or agreement with NCDOT must also comply with Title VI and related authorities, therefore:

(a) During the performance of this contract or agreement, contractors (e.g., subcontractors, consultants, vendors, prime contractors) are responsible for complying with NCDOT's Title VI Program. Contractors are not required to prepare or submit Title VI Programs. To comply with this section, the prime contractor shall:

1. Post NCDOT's Notice of Nondiscrimination and the Contractor's own Equal Employment Opportunity (EEO) Policy in conspicuous locations accessible to all employees, applicants and subcontractors on the jobsite.

2. Physically incorporate the required Title VI clauses into all subcontracts on federally-assisted and state-funded NCDOT projects, and ensure inclusion by subcontractors into all lower-tier subcontracts.

3. Required Solicitation Language. The Contractor shall include the following notification in all solicitations for bids and requests for work or material, regardless of funding source:

   "The North Carolina Department of Transportation, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252, 42 US.C. §§ 2000d to 2000d-4) and the Regulations, hereby notifies all bidders that it will affirmatively ensure that any contract entered into pursuant to this advertisement, disadvantaged business enterprises will be afforded full and fair opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award. In accordance with other related nondiscrimination authorities, bidders and contractors will also not be discriminated against on the grounds of sex, age, disability, low-income level, creed/religion, or limited English proficiency in consideration for an award."

4. Physically incorporate the FHWA-1273, in its entirety, into all subcontracts and subsequent lower tier subcontracts on Federal-aid highway construction contracts only.

5. Provide language assistance services (i.e., written translation and oral interpretation), free of charge, to LEP employees and applicants. Contact NCDOT OCR for further assistance, if needed.

6. For assistance with these Title VI requirements, contact the NCDOT Title VI Nondiscrimination Program at 1-800-522-0453.

(b) Subrecipients (e.g. cities, counties, LGAs, planning organizations) may be required to prepare and submit a Title VI Plan to NCDOT, including Title VI Assurances and/or agreements. Subrecipients must also ensure compliance by their contractors and subrecipients with Title VI. (23 CFR 200.9(b)(7))

(c) If reviewed or investigated by NCDOT, the contractor or subrecipient agrees to take affirmative action to correct any deficiencies found within a reasonable time period, not to exceed 90 calendar days, unless additional time is granted by NCDOT. (23 CFR 200.9(b)(15))

(d) The Contractor is responsible for notifying subcontractors of NCDOT's External Discrimination Complaints Process.

1. Applicability

   Title VI and related laws protect participants and beneficiaries (e.g., members of the public and contractors) from discrimination by NCDOT employees, subrecipients and contractors, regardless of funding source.

2. Eligibility

   Any person—or class of persons—who believes he/she has been subjected to discrimination based on race, color, national origin, Limited English Proficiency (LEP), sex, age, or disability (and religion in the context of employment, aviation, or transit) may file a written complaint. The law also prohibits intimidation or retaliation of any sort.

3. Time Limits and Filing Options

   Complaints may be filed by the affected individual(s) or a representative and must be filed no later than 180 calendar days after the following:

   (i) The date of the alleged act of discrimination; or

   (ii) The date when the person(s) became aware of the alleged discrimination; or

   (iii) Where there has been a continuing course of conduct, the date on which that conduct was discontinued or the latest instance of the conduct.

   Title VI and related discrimination complaints may be submitted to the following entities:

   - North Carolina Department of Transportation, Office of Civil Rights, Title VI Program, 1511 Mail Service Center, Raleigh, NC 27699-1511; toll free 1-800-522-0453
   - Federal Highway Administration, North Carolina Division Office, 310 New Bern Avenue, Suite 410, Raleigh, NC 27601, 919-747-7010
   - US Department of Transportation, Departmental Office of Civil Rights, External Civil Rights Programs Division, 1200 New Jersey Avenue, SE, Washington, DC 20590; 202-366-4070

4. Format for Complaints

   Complaints must be in writing and signed by the complainant(s) or a representative, and include the complainant's name, address, and telephone number. Complaints received by fax or e-mail will be acknowledged and processed. Allegations received by telephone will be reduced to writing and provided to the complainant for confirmation or revision before processing. Complaints will be accepted in other languages, including Braille.

5. Discrimination Complaint Form

   Contact NCDOT Civil Rights to receive a full copy of the Discrimination Complaint Form and procedures.

6. Complaint Basis

   Allegations must be based on issues involving race, color, national origin (LEP), sex, age, disability, or religion (in the context of employment, aviation or transit). "Basis" refers to the complainant's membership in a protected group category.

TABLE 103-1

COMPLAINT BASIS			
Protected Categories	**Definition**	**Examples**	**Applicable Nondiscrimination Authorities**
Race and Ethnicity	An individual belonging to one of the accepted racial groups; or the perception, based usually on physical characteristics that a person is a member of a racial group	Black/African American, Hispanic/Latino, Asian, American Indian/Alaska Native, Native Hawaiian/Pacific Islander, White	Title VI of the Civil Rights Act of 1964; 49 CFR Part 21; 23 CFR 200; 49 U.S.C. 5332(b); 49 U.S.C. 47123. *(Executive Order 13166)*
Color	Color of skin, including shade of skin within a racial group	Black, White, brown, yellow, etc.	
National Origin *(Limited English Proficiency)*	Place of birth. Citizenship is not a factor. (*Discrimination based on language or a person's accent is also covered)*	Mexican, Cuban, Japanese, Vietnamese, Chinese	
Sex	Gender. The sex of an individual. *Note:* Sex under this program does not include sexual orientation.	Women and Men	1973 Federal-Aid Highway Act; 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Age	Persons of any age	21-year-old person	Age Discrimination Act of 1975 49 U.S.C. 5332(b); 49 U.S.C. 47123.
Disability	Physical or mental impairment, permanent or temporary, or perceived.	Blind, alcoholic, para-amputee, epileptic, diabetic, arthritic	Section 504 of the Rehabilitation Act of 1973; Americans with Disabilities Act of 1990
Religion (in the context of employment) *(Religion/ Creed in all aspects of any aviation or transit-related construction)*	An individual belonging to a religious group; or the perception, based on distinguishable characteristics that a person is a member of a religious group. In practice, actions taken as a result of the moral and ethical beliefs as to what is right and wrong, which are sincerely held with the strength of traditional religious views. ***Note:*** Does not have to be associated with a recognized religious group or church; if an individual sincerely holds to the belief, it is a protected religious practice.	Muslim, Christian, Sikh, Hindu, etc.	Title VII of the Civil Rights Act of 1964; 23 CFR 230; FHWA-1273 Required Contract Provisions. *(49 U.S.C. 5332(b);* *49 U.S.C. 47123)*

(3) **Pertinent Nondiscrimination Authorities**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest agrees to comply with the following non-discrimination statutes and authorities, including, but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.

- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability) and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);

(g) The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);

(h) Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

(i) The Federal Aviation Administration's Nondiscrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);

(j) Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Nondiscrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;

(k) Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);

(l) Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

(m) Title VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000e et seq., Pub. L. 88-352), (prohibits employment discrimination on the basis of race, color, religion, sex, or national origin).

(4) **Additional Title VI Assurances**

***The following Title VI Assurances (Appendices B, C and D) shall apply, as applicable*

(a) Clauses for Deeds Transferring United States Property (1050.2A, Appendix B)

The following clauses will be included in deeds effecting or recording the transfer of real property, structures, or improvements thereon, or granting interest therein from the United States pursuant to the provisions of Assurance 4.

NOW, THEREFORE, the U.S. Department of Transportation as authorized by law and upon the condition that the North Carolina Department of Transportation (NCDOT) will accept title to the lands and maintain the project constructed thereon in accordance with the North Carolina General Assembly, the Regulations for the Administration of the Federal-Aid Highway Program, and the policies and procedures prescribed by the Federal Highway Administration of the U.S. Department of Transportation in accordance and in compliance with all requirements imposed by Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the U.S Department of Transportation pertaining to and effectuating the provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 252; 42 U.S.C. § 2000d to 2000d-4), does hereby remise, release, quitclaim and convey unto the NCDOT all the right, title and interest of the U.S. Department of Transportation in and to said lands described in Exhibit A attached hereto and made a part hereof.

(HABENDUM CLAUSE)

TO HAVE AND TO HOLD said lands and interests therein unto the North Carolina Department of Transportation (NCDOT) and its successors forever, subject, however, to the covenants, conditions, restrictions and reservations herein contained as follows, which will remain in effect for the period during which the real property or structures are used for a purpose for which Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits and will be binding on the NCDOT, its successors and assigns.
The NCDOT, in consideration of the conveyance of said lands and interests in lands, does hereby covenant and agree as a covenant running with the land for itself, its successors and assigns, that (1) no person will on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination with regard to any facility located wholly or in part on, over, or under such lands hereby conveyed [,] [and]* (2) that the NCDOT will use the lands and interests in lands and interests in lands so conveyed, in compliance with all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Effectuation of Title VI of the Civil Rights Act of 1964, and as said Regulations and Acts may be amended [, and (3) that in the event of breach of any of the above-mentioned nondiscrimination conditions, the Department will have a right to enter or re-enter said lands and facilities on said land, and that above described land and facilities will thereon revert to and vest in and become the absolute property of the U.S. Department of Transportation and its assigns as such interest existed prior to this instruction].*

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary in order to make clear the purpose of Title VI.)

(b) Clauses for Transfer of Real Property Acquired or Improved Under the Activity, Facility, or Program (1050.2A, Appendix C)

The following clauses will be included in deeds, licenses, leases, permits, or similar instruments entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(a):

1. The (grantee, lessee, permittee, etc. as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree [in the case of deeds and leases add "as a covenant running with the land"] that:

   (i.) In the event facilities are constructed, maintained, or otherwise operated on the property described in this (deed, license, lease, permit, etc.) for a purpose for which a U.S. Department of Transportation activity, facility, or program is extended or for another purpose involving the provision of similar services or benefits, the (grantee, licensee, lessee, permittee, etc.) will maintain and operate such facilities and services in compliance with all requirements imposed by the Acts and Regulations (as may be amended) such that no person on the grounds of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities.

2. With respect to licenses, leases, permits, etc., in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to terminate the (lease, license, permit, etc.) and to enter, re-enter, and repossess said lands and facilities thereon, and hold the same as if the (lease, license, permit, etc.) had never been made or issued. *

3. With respect to a deed, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will have the right to enter or re-enter the lands and facilities thereon, and the above described lands and facilities will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

(c) Clauses for Construction/Use/Access to Real Property Acquired Under the Activity, Facility or Program (1050.2A, Appendix D)

The following clauses will be included in deeds, licenses, permits, or similar instruments/ agreements entered into by the North Carolina Department of Transportation (NCDOT) pursuant to the provisions of Assurance 7(b):

1. The (grantee, licensee, permittee, etc., as appropriate) for himself/herself, his/her heirs, personal representatives, successors in interest, and assigns, as a part of the consideration hereof, does hereby covenant and agree (in the case of deeds and leases add, "as a covenant running with the land") that (1) no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the use of said facilities, (2) that in the construction of any improvements on, over, or under such land, and the furnishing of services thereon, no person on the ground of race, color, or national origin, will be excluded from participation in, denied the benefits of, or otherwise be subjected to discrimination, (3) that the (grantee, licensee, lessee, permittee, etc.) will use the premises in compliance with all other requirements imposed by or pursuant to the Acts and Regulations, as amended, set forth in this Assurance.
2. With respect to (licenses, leases, permits, etc.), in the event of breach of any of the above Non¬ discrimination covenants, the NCDOT will have the right to terminate the (license, permit, etc., as appropriate) and to enter or re-enter and repossess said land and the facilities thereon, and hold the same as if said (license, permit, etc., as appropriate) had never been made or issued. *
3. With respect to deeds, in the event of breach of any of the above Nondiscrimination covenants, the NCDOT will there upon revert to and vest in and become the absolute property of the NCDOT and its assigns. *

(*Reverter clause and related language to be used only when it is determined that such a clause is necessary to make clear the purpose of Title VI.)

STANDARD SPECIAL PROVISION

MINORITY AND FEMALE EMPLOYMENT REQUIREMENTS

Z-7

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (*EXECUTIVE NUMBER 11246*)

1. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, see as shown on the attached sheet entitled "Employment Goals for Minority and Female participation".

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with the Executive Order and the regulations in *41 CFR Part 60-4* shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in *41 CFR 60-4.3(a)*, and its effort to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the executive Order and the regulations *in 41 CFR Part 60-4*. Compliance with the goals will be measured against the total work hours performed.

2. As used in this Notice and in the contract resulting from this solicitation, the "covered area" is the county or counties shown on the cover sheet of the proposal form and contract.

EMPLOYMENT GOALS FOR MINORITY AND FEMALE PARTICIPATION

Economic Areas

Area 023 29.7%
Bertie County
Camden County
Chowan County
Gates County
Hertford County
Pasquotank County
Perquimans County

Area 024 31.7%
Beaufort County
Carteret County
Craven County
Dare County
Edgecombe County
Green County
Halifax County
Hyde County
Jones County
Lenoir County
Martin County
Nash County
Northampton County
Pamlico County
Pitt County
Tyrrell County
Washington County
Wayne County
Wilson County

Area 025 23.5%
Columbus County
Duplin County
Onslow County
Pender County

Area 026 33.5%
Bladen County
Hoke County
Richmond County
Robeson County
Sampson County
Scotland County

Area 027 24.7%
Chatham County
Franklin County
Granville County
Harnett County
Johnston County
Lee County
Person County
Vance County
Warren County

Area 028 15.5%
Alleghany County
Ashe County
Caswell County
Davie County
Montgomery County
Moore County
Rockingham County
Surry County
Watauga County
Wilkes County

Area 029 15.7%
Alexander County
Anson County
Burke County
Cabarrus County
Caldwell County
Catawba County
Cleveland County
Iredell County
Lincoln County
Polk County
Rowan County
Rutherford County
Stanly County

Area 0480 8.5%
Buncombe County
Madison County

Area 030 6.3%
Avery County
Cherokee County
Clay County
Graham County
Haywood County
Henderson County
Jackson County
McDowell County
Macon County
Mitchell County
Swain County
Transylvania County
Yancey County

SMSA Areas

Area 5720 26.6%
Currituck County

Area 9200 20.7%
Brunswick County
New Hanover County

Area 2560 24.2%
Cumberland County

Area 6640 22.8%
Durham County
Orange County
Wake County

Area 1300 16.2%
Alamance County

Area 3120 16.4%
Davidson County
Forsyth County
Guilford County
Randolph County
Stokes County
Yadkin County

Area 1520 18.3%
Gaston County
Mecklenburg County
Union County

Goals for Female

Participation in Each Trade

(Statewide) 6.9%

STANDARD SPECIAL PROVISION

REQUIRED CONTRACT PROVISIONS FEDERAL - AID CONSTRUCTION CONTRACTS

FHWA - 1273 Electronic Version - May 1, 2012 Z-8

I. General
II. Nondiscrimination
III. Nonsegregated Facilities
IV. Davis-Bacon and Related Act Provisions
V. Contract Work Hours and Safety Standards Act Provisions
VI. Subletting or Assigning the Contract
VII. Safety: Accident Prevention
VIII. False Statements Concerning Highway Projects
IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
X. Compliance with Governmentwide Suspension and Debarment Requirements
XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

   The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

   Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

   Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).
2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.
3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.
4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding $10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. **Equal Employment Opportunity:** Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:
   a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.
   b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. **EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.
3. **Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:
   a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.
   b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.
   c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.
   d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.
   e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.
4. **Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.
   a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.
   b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.
   c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.
5. **Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:
   a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.
   b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.
   c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.
   d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.
6. **Training and Promotion:**
   a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.
   b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).
   c The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.
   d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.
7. **Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:
   a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.
   b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.
   c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.
   d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race,

color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. **Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.
9. **Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.
    a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.
    b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.
10. **Assurance Required by 49 CFR 26.13(b):**
    a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.
    b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.
11. **Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.
    a. The records kept by the contractor shall document the following:
        (1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;
        (2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and
        (3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;
    b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of $10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding $2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. **Minimum wages**
    a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

    Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH–1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

    b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The

contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. **Withholding.** The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. **Payrolls and basic records**

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b. (1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g. , the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH–347 is available for this purpose from the Wage and Hour Division Web site at http://www.dol.gov/esa/whd/forms/ wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH–347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. **Apprentices and trainees**

a. Apprentices (programs of the USDOL). Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL). Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT). Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. **Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. **Subcontracts.** The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. **Contract termination:** debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. **Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. **Disputes concerning labor standards.** Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. **Certification of eligibility.**

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. **Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
2. **Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.
3. **Withholding for unpaid wages and liquidated damages.** The FHWA or the contacting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.
4. **Subcontracts.** The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).
   a. The term “perform work with its own organization” refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees

from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:
(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
(2) the prime contractor remains responsible for the quality of the work of the leased employees;
(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.
3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.
4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.
5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.
2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).
3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.
2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost $25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. **Instructions for Certification – First Tier Participants:**
   a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
   b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.
   c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.
   d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
   e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). “First Tier Participant” refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). “Lower Tier Participant” refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).
   f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
   g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.
   h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.
   i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
   j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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2. **Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**
   a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:
      (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;
      (2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
      (3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and
      (4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
   b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.
2. **Instructions for Certification - Lower Tier Participants:**
   (Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost $25,000 or more - 2 CFR Parts 180 and 1200)
   a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.
   b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
   c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.
   d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. “First Tier Covered Transactions” refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). “Lower Tier Covered Transactions” refers to any covered transaction

under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the $25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (https://www.epls.gov/), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:
   a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
   b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.
3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

STANDARD SPECIAL PROVISION

ON-THE-JOB TRAINING

(10-16-07) (Rev. 4-21-15) Z-10

Description

The North Carolina Department of Transportation will administer a custom version of the Federal On-the-Job Training (OJT) Program, commonly referred to as the Alternate OJT Program. All contractors (existing and newcomers) will be automatically placed in the Alternate Program. Standard OJT requirements typically associated with individual projects will no longer be applied at the project level. Instead, these requirements will be applicable on an annual basis for each contractor administered by the OJT Program Manager.

On the Job Training shall meet the requirements of 23 CFR 230.107 (b), 23 USC – Section 140, this provision and the On-the-Job Training Program Manual.

The Alternate OJT Program will allow a contractor to train employees on Federal, State and privately funded projects located in North Carolina. However, priority shall be given to training employees on NCDOT Federal-Aid funded projects.

Minorities and Women

Developing, training and upgrading of minorities and women toward journeyman level status is a primary objective of this special training provision. Accordingly, the Contractor shall make every effort to enroll minority and women as trainees to the extent that such persons are available within a reasonable area of recruitment. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

Assigning Training Goals

The Department, through the OJT Program Manager, will assign training goals for a calendar year based on the contractors' past three years' activity and the contractors' anticipated upcoming year's activity with the Department. At the beginning of each year, all contractors eligible will be contacted by the Department to determine the number of trainees that will be assigned for the upcoming calendar year. At that time the Contractor shall enter into an agreement with the Department to provide a self-imposed on-the-job training program for the calendar year. This agreement will include a specific number of annual training goals agreed to by both parties. The number of training assignments may range from 1 to 15 per contractor per calendar year. The Contractor shall sign an agreement to fulfill their annual goal for the year.\

Training Classifications

The Contractor shall provide on-the-job training aimed at developing full journeyman level workers in the construction craft/operator positions. Preference shall be given to providing training in the following skilled work classifications:

Equipment Operators	Office Engineers
Truck Drivers	Estimators
Carpenters	Iron / Reinforcing Steel Workers
Concrete Finishers	Mechanics
Pipe Layers	Welders

The Department has established common training classifications and their respective training requirements that may be used by the contractors. However, the classifications established are not all-inclusive. Where the training is oriented toward construction applications, training will be allowed in lower-level management positions such as office engineers and estimators. Contractors shall submit new classifications for specific job functions that their employees are performing. The Department will review and recommend for acceptance to FHWA the new classifications proposed by contractors, if applicable. New classifications shall meet the following requirements:

Proposed training classifications are reasonable and realistic based on the job skill classification needs, and

The number of training hours specified in the training classification is consistent with common practices and provides enough time for the trainee to obtain journeyman level status.

The Contractor may allow trainees to be trained by a subcontractor provided that the Contractor retains primary responsibility for meeting the training and this provision is made applicable to the subcontract. However, only the Contractor will receive credit towards the annual goal for the trainee.

Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment.

No employee shall be employed as a trainee in any classification in which they have successfully completed a training course leading to journeyman level status or in which they have been employed as a journeyman.

Records and Reports

The Contractor shall maintain enrollment, monthly and completion reports documenting company compliance under these contract documents. These documents and any other information as requested shall be submitted to the OJT Program Manager.

Upon completion and graduation of the program, the Contractor shall provide each trainee with a certification Certificate showing the type and length of training satisfactorily completed.

Trainee Interviews

All trainees enrolled in the program will receive an initial and Trainee/Post graduate interview conducted by the OJT program staff.

Trainee Wages

Contractors shall compensate trainees on a graduating pay scale based upon a percentage of the prevailing minimum journeyman wages (Davis-Bacon Act). Minimum pay shall be as follows:

60 percent	of the journeyman wage for the first half of the training period
75 percent	of the journeyman wage for the third quarter of the training period
90 percent	of the journeyman wage for the last quarter of the training period

In no instance shall a trainee be paid less than the local minimum wage. The Contractor shall adhere to the minimum hourly wage rate that will satisfy both the NC Department of Labor (NCDOL) and the Department.

Achieving or Failing to Meet Training Goals

The Contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and who receives training for at least 50 percent of the specific program requirement. Trainees will be allowed to be transferred between projects if required by the Contractor's scheduled workload to meet training goals.

If a contractor fails to attain their training assignments for the calendar year, they may be taken off the NCDOT's Bidders List.

Measurement and Payment

No compensation will be made for providing required training in accordance with these contract documents.

STANDARD SPECIAL PROVISION
MINIMUM WAGES
GENERAL DECISION NC20210090 01/01/2021 NC90

Z-090

Date: January 1, 2021

General Decision Number: NC20210090 01/01/2021 NC90

Superseded General Decision Numbers: NC20200090

State: North Carolina

Construction Type: HIGHWAY

COUNTIES:

Brunswick	Greene	Onslow
Cumberland	Hoke	Pender
Currituck	Johnston	Pitt
Edgecombe	Nash	Wake
Franklin	New Hanover	Wayne

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $12.90 for calendar year 2024 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract for calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR.5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2) – (60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021

	Rates	Fringes

	Rates	Fringes
BLASTER	21.04	
CARPENTER	13.72	
CEMENT MASON/CONCRETE FINISHER	14.48	
ELECTRICIAN		
Electrician	17.97	
Telecommunications Technician	16.79	.63
IRONWORKER	16.02	
LABORER		
Asphalt Raker and Spreader	12.46	
Asphalt Screed/Jackman	14.33	
Carpenter Tender	12.88	
Cement Mason/Concrete Finisher Tender	12.54	
Common or General	10.20	
Guardrail/Fence Installer	12.87	
Pipelayer	12.17	
Traffic Signal/Lighting Installer	14.89	
PAINTER		
Bridge	24.57	
POWER EQUIPMENT OPERATORS		
Asphalt Broom Tractor	11.85	
Bulldozer Fine	17.04	
Bulldozer Rough	14.34	
Concrete Grinder/Groover	20.34	2.30
Crane Boom Trucks	20.54	
Crane Other	20.08	
Crane Rough/All-Terrain	20.67	
Drill Operator Rock	14.38	
Drill Operator Structure	21.14	
Excavator Fine	16.60	
Excavator Rough	14.00	
Grader/Blade Fine	18.47	
Grader/Blade Rough	14.62	
Loader 2 Cubic Yards or Less	13.76	
Loader Greater Than 2 Cubic Yards	14.14	
Material Transfer Vehicle (Shuttle Buggy)	15.18	
Mechanic	17.55	
Milling Machine	15.36	
Off-Road Hauler/Water Tanker	11.36	
Oiler/Greaser	13.55	
Pavement Marking Equipment	12.11	
Paver Asphalt	15.59	
Paver Concrete	18.20	
Roller Asphalt Breakdown	12.45	
Roller Asphalt Finish	13.85	
Roller Other	11.36	
Scraper Finish	12.71	
Scraper Rough	11.35	
Slip Form Machine	16.50	
Tack Truck/Distributor Operator	14.52	
TRUCK DRIVER		
GVWR of 26,000 Lbs or Less	11.12	
GVWR of 26,001 Lbs or Greater	12.37	

Welders – Receive rate prescribed for craft performing operation to which welding is incidental.
Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, D.C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

STANDARD SPECIAL PROVISION

GREENWAYS AND MULTI-USE PATHS

(2-18-14) Z-200

Description

This special provision provides for revisions to the *2018 Standard Specifications* for work on a greenway or multi-use path not designed or intended to carry highway traffic.

Materials

Refer to the *2018 Standard Specifications* except as noted in these Special Provisions. Use materials on the NCDOT Approved Products List (APL) where applicable.

Construction Methods

Construct Greenway in accordance with the contract plans, *2018 Standard Specifications* except as noted below:

SECTION	ARTICLE	PAGE	REVISION
235: Embankments	235-3(C): Embankment Compaction	2-24	**Delete first sentence and replace with the following:** Compact each layer for its full width to a density equal to at least 90% of that obtained by compacting a sample of the material in accordance with AASHTO T 99 as modified by the Department.
500: Fine Grading Subgrade	500-2(C): Compaction of Subgrade	5-1	**Delete first sentence and replace with the following:** Compact all material to a depth of up to 8 inches below the finished surface of the subgrade to a density equal to at least 92% of that obtained by compacting a sample of the material in accordance with AASHTO T 99 as modified by the Department.
500: Fine Grading Subgrade	500-3: Tolerances	5-2	**Delete Article 500-3 and replace with the following:** A tolerance of plus or minus one inch from the established greenway grade will be permitted after the subgrade has been graded to a uniform surface.
505: Aggregate Subgrade	505-3: Construction Methods	5-8	**Delete first paragraph and replace with the following:** Perform shallow undercut up to 12 inches as necessary to remove unsuitable material. If necessary, install geotextile for soil stabilization in accordance with Article 270-3. Place Class III select material or Class IV subgrade stabilization (standard size no. ABC) by end dumping on geotextiles. Do not operate heavy equipment on geotextiles until geotextiles are covered with Class III or ABC. Compact ABC to 92% or to the highest density that can be reasonably attained.

SECTION	ARTICLE	PAGE	REVISION
520: Aggregate Base Course	520-7: Shaping and Compaction	5-11	**Delete first sentence in second paragraph and replace with the following:** For both nuclear and ring tests, compact each layer of the base to a density equal to at least 92% of that obtained by compacting a sample of the material in accordance with AASHTO T 180 as modified by the Department. **Delete the third paragraph.**
610: Asphalt Concrete Plant Mix Pavements	610-10: Density Requirements	6-23	**Delete Article 610-10 and replace with the following:** Compact the asphalt plant mix to at least 85% of the maximum specific gravity.
610: Asphalt Concrete Plant Mix Pavements	610-13: Final Surface Testing and Acceptance	6-24	**Delete Article 610-13.**
848: Concrete Sidewalks	848-3: Construction Methods	8-31	**Delete second paragraph and replace with the following:** Construct concrete greenway based on the typical sections in the plans. Place groove joints at a spacing equal to the width of the greenway. Transverse Expansion Joints are required every 40 feet.

PROJECT SPECIAL PROVISIONS

SIGNAL

PEDESTRIAN HYBRID BEACON SIGNAL:

Description

Provide a fully operable Pedestrian Hybrid Beacon signal at the location defined on the approved project signal plans. Signal installation shall consist of two (2) wood poles, four (4) vehicle signal heads, two (2) pedestrian countdown heads with pushbuttons and applicable signing. The signal shall be constructed in accordance with all applicable City of Wilmington and North Carolina Department of Transportation (NCDOT) standards and specifications.

Materials

Comply with all applicable sections of the *2018 NCDOT Standard Specifications for Roads and Structures* for all components of the installation.

Construction Methods

Contractor shall follow standard NCDOT construction methods for installation of the Pedestrian Hybrid Beacon signal.

Measurement and Payment

Actual number of Pedestrian Hybrid Beacon signals furnished, installed, and accepted.

No measurement will be made for individual components of the Pedestrian Hybrid Beacon signal as these items will be considered incidental to furnishing and installing Pedestrian Hybrid Beacon signals.

Payment will be made under:

Pay Item	**Pay Unit**
Pedestrian Hybrid Beacon Signal	Lump Sum

SUPPLEMENTAL SPECIFICATION FOR
FLEXI-PAVE SURFACING

I DESCRIPTION

This work shall consist of furnishing of all labor, materials, equipment, and services for installation of all **Flexi-Pave Surfacing** to include paving set in aggregate setting beds.

II RELATED REQUIREMENTS:

Materials and methods of construction shall comply with the following standards:

1. American Society for Testing Materials (ASTM)

   ASTM C 666/C 666M-03, "Standard Test Method for Resistance of Concrete to Freezing and Thawing, Procedure A - freezing and Thawing in Water." Samples shall indicate only minimal mass change results after 300 nominal freeze-thaw cycles, and visual examination of the test specimens shall indicate no cracks or breaks.

   D 3385-03 Standard Test Method for Infiltration Rate of Soils in Field Using Double-Ring Infiltrometer.

   D 3665-06 Standard Practice for Random Sampling of Construction Materials E 329-06a Specification for Agencies Engaged in Construction Inspection and/or Testing.

Comply with all applicable requirements for local governing bodies.

Installer Qualifications:

1. Flexi-Pave Surfacing installer shall be currently certified by the Manufacturer and have successfully installed a minimum of 10,000 square feet within the Mid-Atlantic region within the last year.

2. Flexi-Pave Surfacing installer shall employ no less than two Manufacturer-certified Flexible Porous Paving technicians on staff who directly oversee or perform the installations during all Flexible Porous Paving placement, unless otherwise specified.

III DEFINITIONS

1. Exposure Condition, Moderate: Exposure to a climate where the paving will not be in a saturated condition when exposed to freezing and will not be exposed to deicing agents or other aggressive chemicals.

2. Exposure Condition, Severe: Exposure to deicing chemicals or other aggressive agents or where the paving can become saturated by continual contact with moisture or free water before freezing.

3. Base Reinforcement: The use of a geosynthetic within the aggregate base course to enhance the performance of paving

4. Geogrid: Biaxial or triaxial woven polypropylene material for base course reinforcement and confinement, and subgrade stabilization and increased subgrade load capacity

5. Panel: An individual paving slab bordered by joints or slab edges.

6. Porous/Pervious Paving: A paving comprising material with sufficient continuous voids to allow water to pass from the surface to the underlying layers.

7. Porous/Pervious: The property of a material which permits movement of water through it under ordinary hydrostatic pressure.

8. Flexible Porous Paving: Paving system comprised of three components: recycled passenger car tires, aggregate, and urethane binder that provides a strong, pervious, yet flexible paving.

9. Subbase: A layer in a paving system between the subgrade and the base course, or between the subgrade and a flexible pervious paving.

10. Subgrade: The soil prepared and compacted to support a structure or paving system.

III MATERIALS

(a) Subbase

Coarse aggregates shall meet the durability requirements of ASTM C 33.

(b) Flexi-Pave Surfacing Types:

Flexi-Pave – All Stone (Vehicular) Surfacing
Color: Snow White Granite

Flexi-Pave Surfacing
Color: Cobalt

Flexi-Pave – All Stone Surfacing
Color: Snow White Granite

Manufacturer: Capitol Flexi-Pave

(c) Bonding: Have the capacity to bind with: wood; steel; concrete; aluminum; compacted aggregate; enamel tile, or; fiberglass

(d) Resistance to degradation: Resistant to: chlorine; ozone; bromine; muriatic acid; salt water; oil; transmission oil, and; hydraulic oil.

(e) Aggregate:

1. Stone: Triple-washed coarse aggregate, No. 8 coarse aggregate (3/8 to ½ inch) per ASTM C 33. Bagged and labeled as tested and certified by Flexible Porous Paving Manufacturer.

   a. Nominal maximum aggregate size shall not exceed ⅓ of the specified paving thickness.

2. Rubber: Recycled passenger tires ground to ⅜" nominal with the wire remnants removed.

(f) Binding agent: urethane liquid prepolymer based upon Diphenylmethane-Diisocyanate.

(g) Air Entraining Agents: Prohibited.

(h) Mix Design: Using materials acceptable to the Manufacturer design a tentative mix and test for the consistency intended for use on the work and specified.

1. The volume by weight of aggregate per cu. yd. shall be 50% of the total dry mix.

2. The volume by weight of the rubber product per cu. yd. shall be 50% of the total dry mix.

3. Permeability: Pervious infiltration rate of 2,000 gallons/square foot/hour

(i) Source Limitations: Obtain each type of paving and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

(j) Forms:

1. Make forms with steel, wood, or other material that is sufficiently rigid to maintain specified tolerances, and capable of supporting concrete and mechanical concrete placing equipment.

2. Forms shall be clean and free of debris of any kind, rust, and hardened concrete.

3. Form release: Diesel, Bio-diesel or vegetable oil coating.

IV PROCEDURES

(a) Project Conditions

Traffic Control: Maintain access for pedestrian traffic as required for other construction activities.

Schedule placements to minimize exposure to wind and heat before curing materials are applied.

Avoid placing porous paving if rain, snow, or frost is forecast within 24 hours unless measures are taken as described later. Always protect fresh paving from moisture and freezing.

Contractor shall not proceed with paving construction until signal foundation and/or pedestrian signal foundations are set.

Contractor shall not proceed with paving construction until adjacent or adjoining curb, walk, stair, and/or concrete walk construction is complete.

(b) Coordination

Coordinate with concrete work and other appropriate sections of the specifications to insure that proper recesses and provisions are made for the work specified herein.

(c) Execution

1. Subgrade Preparation

Prepare subgrade as specified in the contract documents.

Construct subgrade to ensure that the required paving thickness is obtained in all locations.

Keep all traffic off of the subgrade during construction to the maximum extent practical. Regrade subgrade disturbed by delivery vehicles or other construction traffic, as needed.

Compact the material added to obtain final subgrade elevation.

Determine subgrade permeability in accordance with ASTM D3385 before porous paving placement. Confirm that subgrade permeability meets requirements of Contract Documents.

2. Subbase

   Prepare subbase in accordance with contract documents.

3. Setting Formwork

   Set, align, and brace forms so that the hardened paving meets the tolerances specified herein.

   Apply form release agent to the form face which will be in contact with porous paving, immediately before placing paving.

   The vertical face of previously placed concrete may be used as a form.

   a. Protect previously placed paving from damage.

   b. Do not apply form release agent to previously placed concrete.

   c. Apply liquid urethane bonding agent to face of surfaces when adhesion is desired

   Placement width shall be as specified in Contract Documents.

4. Batching, Mixing, and Delivery

   Batch and mix on site in compliance with Manufacturer's written specifications, except that discharge shall be completed within 5 minutes of the introduction of urethane to the dry products.

5. Placing and Finishing Paving

   Do not place porous paving on frozen or wet subgrade or subbase

   Deposit porous paving either directly onto the subgrade or subbase by wheelbarrow or by material handler onto the subgrade or subbase, unless otherwise specified.

   Deposit porous paving between the forms to an approximately uniform height.

   Spread the porous paving using a come-along, short-handle, square-ended shovel or rake.

   Use steel trowels to finish to the elevations and thickness specified in Contract Documents.

6. Final Surface Texture

   Final surface of porous paving shall be smoothed with bull float and magnesium trowels.

7. Edging

   When forms are not used, bevel the edge of the top surface to a 45° slope

8. Curing

   Begin curing within 20 minutes of paving discharge, unless longer working time is accepted by the Manufacturer.

   Completely cover the paving surface with a minimum 4 mil thick polyethylene sheet only if rain or sprinklers are imminent within 20 minutes. Cut sheeting to a minimum of a full placement width.

   a. Cover all exposed edges of paving with polyethylene sheet.

   b. Secure curing cover material without using dirt.

   Cure paving for a minimum of 24 uninterrupted hours, unless otherwise specified.

9. Hot and Cold Weather Construction

   When hot weather is anticipated up to 95 degrees Fahrenheit, no special procedures are necessary.

   In cold weather when temperatures may fall below freezing just after an installation, utilize a fan to maintain airflow over porous paving during the curing process.

10. Opening to Traffic

    Do not open the paving to light vehicular traffic until the porous paving has cured for at least 24 hours during warm weather, and 48 hours during very cold temperatures at or near freezing and not until the porous paving is accepted by the Owner for opening to traffic. Paving should be checked and verified to be sufficiently hardened after the curing period as relative humidity can alter the curing time in some regions.

V WARRANTY

Manufacturer's standard.

The Contractor shall provide the Owner with a written warranty covering workmanship and material defects within the first 12 months from the date of final approval of the **Flexi-Pave**. Failure of any part of the Flexi-Pave including defects, settling, heaving, shifting, spalling, cracking, and efflorescence during this period shall be replaced by the Contractor, at no cost to the Owner including cost of shipping, within thirty (30) days of notification.

VI DOCUMENT REQUIREMENTS

The Contractor shall develop and submit manufacturer's product data for each type of **Flexi-Pave Surfacing** for review and approval by the Owner prior to installation, with the following information:

1. Product Data: Proposed mix design, for each pavement color/type.

2. Samples for Verification: Provide one 6” diameter sample, full thickness, for each pavement color/type.

3. For Porous Paving Installer:

   a. Provide a list of successfully installed Flexible Porous Paving projects, as required herein, including the address, square footage, and photographs for each project.

   b. Manufacturer's Certifications.

The cost of preparing and submitting the product data shall be included with the cost of the **Flexi-Pave Surfacing** pay item.

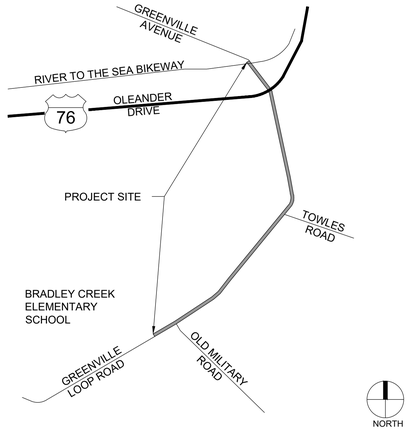
VII MEASUREMENT AND PAYMENT

Payment for **Flexi-Pave Surfacing** shall include the paving, edging, geogrid, underdrains, stone base, topsoil, filter fabric, rubber membrane, straw and seed, masking and forming, excavation and disposal of existing soil, and all labor, materials, and equipment to install the paving complete and in place. **Flexi-Pave Surfacing** shall be measured in place and paid for at the unit price per square foot.

Payment will be made under:

Pay Item	**Pay Unit**
PermaDrive Vehicular Surfacing Color: XXX	Square-Foot
Flexi-Pave Surfacing Color: XXX	Square-Foot

GREENVILLE LOOP TRAIL SECTION 3



VICINITY MAP
SCALE: 1" = 20'

CITY OF WILMINGTON ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402

CITY OF WILMINGTON
BID DOCUMENT SUBMITTAL

SUBMITTED ON SEPTEMBER 28, 2022

CITY OF WILMINGTON PROJECT#: 2TRST1591

PROJECT LOCATION:
GREENVILLE LOOP ROAD AND OLD MILITARY ROAD INTERSECTION TO PARK AVENUE AND GREENVILLE AVENUE INTERSECTION

PROJECT WORK TYPE:
GRADING, PAVING, DRAINAGE, AND EROSION CONTROL

WILMINGTON, NC MAYOR:
BILL SAFFO

WILMINGTON, NC CITY MANAGER:
ANTHONY CAUDLE

SHEET INDEX

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L1.02	ENLARGED SECTION 3 EXISTING CONDITIONS PLAN	•
L1.03	ENLARGED SECTION 3 EXISTING CONDITIONS PLAN	•
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	REFERENCE SIGNALIZATION CALCULATIONS	•

CLIENT

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101 N. TRYON STREET SUITE 1400 CHARLOTTE, NC 28202 T 704.334.7925
FIRM LICENSE #: C-1051 www.stewartinc.com PROJECT #: L21014

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Vicinity map:

Key map:

Seal:

NORTH CAROLINA LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN
10.09.2023

NORTH CAROLINA PROFESSIONAL SEAL 13328 LAND SURVEYOR JEFFREY D. ODEN
10.09.2023

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

COVER SHEET

Project number: L21014
Issued Date: 2025.04.09
Drawn by: GD/TM
Approved by: GD/JO/TD
Sheet #: L0.00

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GENERAL NOTES:

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE CITY OF WILMINGTON, THE OFFICE OF STATE CONSTRUCTION, DEPARTMENT OF INSURANCE, NCDEQ, AND ALL OTHER APPLICABLE LOCAL, STATE AND FEDERAL GUIDELINES. ALL UTILITY CONSTRUCTION SHALL COMPLY WITH APPLICABLE LOCAL JURISDICTIONAL STANDARDS AND SPECIFICATIONS.
2. EXISTING SURVEY INFORMATION INCLUDING TOPOGRAPHIC INFORMATION PROVIDED BY STEWART , UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, COORDINATING AND PAYMENT FOR ALL NECESSARY LOCATING SERVICES INCLUDING INDEPENDENT LOCATING SERVICES. THE CONTRACTOR SHALL PROVIDE NOTICE OF EXCAVATION TO NOTIFICATION CENTER AND FACILITY OWNERS (PER NC STATUTE) NO LESS THAN 3 BUSINESS DAYS AND NO MORE THAN 12 WORKING DAYS PRIOR TO BEGINNING DEMOLITION, EXCAVATION OR ANY OTHER FORM OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS. NO EXCAVATION OR DEMOLITION SHALL BE STARTED WITHOUT ALL UTILITIES BEING LOCATED.
4. ALL SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
5. EXISTING IMPROVEMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND COORDINATING PERMITS, INSPECTIONS, CERTIFICATIONS AND OTHER REQUIREMENTS WHICH MUST BE MET UNDER THIS CONTRACT.
7. THE CONTRACTOR SHALL MAINTAIN "AS-BUILT" DRAWINGS TO RECORD THE ACTUAL LOCATION OF ALL PIPING PRIOR TO CONCEALMENT, VALVE AND MANHOLE CHANGES, AND HARDSCAPE CHANGES. DRAWINGS SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE AT REGULAR INTERVALS, OR AS REQUESTED THROUGHOUT THE PROJECT FOR RECORD KEEPING.
8. IF DEPARTURES FROM THE PROJECT DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THERE OF SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITY LINES REQUIRED TO COMPLETE ANY PORTION OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COORDINATION AND COSTS OF THE RELOCATION AND ASSOCIATED WORK.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING THE PREMISES FREE FROM ACCUMULATIONS OF WASTE MATERIALS AND RUBBISH CAUSED BY THE CONTRACTOR. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS.
11. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.
12. ROADWAYS (TEMPORARY OR PERMANENT) MUST BE CAPABLE OF SUPPORTING FIRE FIGHTING APPARATUS (85,000 LBS) DURING ALL PHASES OF CONSTRUCTION ONCE VERTICAL CONSTRUCTION HAS BEGUN.

EXISTING CONDITION NOTES:

1. THIS SURVEY MAP IS INTENDED TO REPRESENT THE EXISTING CONDITIONS/TOPOGRAPHY ON A PORTION OF THE PROPERTY AND ALL ENCUMBRANCES UPON THE PROPERTY MAY NOT BE SHOWN.
2. HORIZONTAL DATUM IS NAD 83-2011 AND VERTICAL DATUM IS NAVD88.
3. THIS DRAWING DOES NOT CONFORM TO N.C. GS47-30 AND THEREFORE IS NOT FOR RECORDATION.
4. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO COMMENCING CONSTRUCTION.
5. SURVEY INFORMATION BASED ON LIDAR BY STEWART COMPLETED ON 01.11.2022.
6. TREES SHOWN HEREON MAY NOT REPRESENT ALL VEGETATION ON THE SUBJECT PROPERTY.
7. PORTIONS OF THE PROJECT AREA LIES IN ZONE X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), BASED ON FEMA FLOOD MAP NUMBER 3720315600K DATED AUGUST 28, 2018 AND MAP NUMBER 3720314600K DATED AUGUST 28, 2018.
8. WETLANDS SHOWN ARE TAKEN FROM NC DIVISION OF COASTAL MANAGEMENT GIS.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL REMOVE CONCRETE (WHERE REQUIRED) TO THE FIRST COLD JOINT OR SAW CUT TO OBTAIN A CLEAN EDGE.
2. THE CONTRACTOR SHALL SAWCUT EXISTING ASPHALT (WHERE REQUIRED) TO OBTAIN A CLEAN EDGE.
3. CLEANOUTS AND WATER VALVES LOCATED IN AREAS OF DEMOLITION OR SUBSEQUENT CONSTRUCTION SHALL BE PROTECTED FROM DAMAGE AND RAISED TO BE FLUSH WITH NEW GRADE.
4. ANY UTILITY SERVICES SHOWN TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY PROVIDER. CONTRACTOR IS RESPONSIBLE FOR APPROPRIATE SEQUENCING OF UTILITY DEMOLITION WITH THE RESPECTIVE UTILITY AGENCIES.
5. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES PRIOR TO BEGINNING DEMOLITION OPERATIONS. NOTIFY "NORTH CAROLINA ONE CALL" (TELEPHONE 1-800-632-4949) AT LEAST 48 HOURS PRIOR TO START OF DEMOLITION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR SHALL CONTACT ANY LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NORTH CAROLINA ONE CALL."
6. CLEAN SOILS SHALL BE UTILIZED FOR BACKFILL. COMPACTION OF THESE SOILS SHALL BE PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.
7. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE REMOVED COMPLETELY, INCLUDING ALL SUBGRADE MATERIALS DIRECTLY ASSOCIATED WITH ITEMS TO BE REMOVED.
8. ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE DISPOSED OF LEGALLY OFF-SITE UNLESS OTHERWISE NOTED ON THIS PLAN.
9. REFER TO DEMOLITION DRAWINGS FOR TREE PROTECTION.
10. ALL DEMOLITION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL JURISDICTIONAL CODES OR REQUIREMENTS.
11. TREE PROTECTION FENCING SHALL BE IN PLACE PRIOR TO BEGINNING DEMOLITION
12. EROSION CONTROL PERMIT SHALL BE OBTAINED AND ONSITE PRIOR TO BEGINNING DEMOLITION.
13. ITEMS DESIGNATED TO BE SALVAGED AND/OR RE-USED SHALL BE REMOVED BY THE CONTRACTOR AND PROVIDED TO THE OWNER. COORDINATE STORAGE LOCATION WITH OWNER'S REPRESENTATIVE.
14. DEMOLITION AND SUBSEQUENT CONSTRUCTION OF STORM DRAINAGE PIPING SHALL BE PERFORMED IN SUCH A MANNER THAT THE OLD PIPE AND STRUCTURES REMOVED DO NOT IMPACT DRAINAGE UPSTREAM OF THE SYSTEM. PROVISIONS SHALL BE MADE TO MAINTAIN STORM WATER DRAINAGE PATTERNS DURING CONSTRUCTION.
15. DEMOLITION AND SUBSEQUENT CONSTRUCTION OF UTILITIES (WATER, SEWER, ETC) SHALL BE PERFORMED IN SUCH A MANNER THAT THE OLD PIPE AND STRUCTURES REMOVED DO NOT IMPACT OR MINIMIZE SERVICE INTERRUPTION TO EXISTING FACILITIES TO REMAIN. PROVISIONS SHALL BE MADE TO MAINTAIN SERVICE DURING CONSTRUCTION.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL DAMAGES TO THE EXISTING DRIVEWAY, PARKING LOT, SIDEWALK AND CURB AND GUTTER AS A RESULT OF CONSTRUCTION ACTIVITY AND TRAFFIC. CONTRACTOR SHALL MAINTAIN A PRE-CONSTRUCTION VIDEO OR PHOTO DOCUMENTATION TO SHOW NO DAMAGES OCCURRED.
17. ALL MATERIALS, FURNISHINGS, UTILITIES, AND PAVEMENT THAT ARE NOT SCHEDULED TO BE DEMOLISHED AND ARE DAMAGED BY THE CONTRACTOR AS A RESULT OF THE DEMOLITION OR CONSTRUCTION OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
18. WHERE UTILITIES ARE SHOWN TO BE "REMOVED", CONTRACTOR SHALL INCLUDE NECESSARY PLUG OR VALVES TO ENSURE UTILITY LINES TO REMAIN WILL CONTINUE TO BE IN SERVICE. COORDINATE NECESSARY SHUT DOWN AND REMOVAL WITH THE LOCAL JURISDICTION OR UTILITY OWNER.
19. CONTRACTOR SHALL PROVIDE PEDESTRIAN INGRESS / EGRESS TO ALL EXISTING BUILDINGS, PARKING LOTS, AND PATHS OF PEDESTRIAN TRAVEL THROUGHOUT THE CONSTRUCTION PERIOD

SITE NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF THE CONSTRUCTION LAYDOWN AREA, PERIMETER FENCE, AND ASSOCIATED GATES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE REMOVAL OF THE CONSTRUCTION LAYDOWN AREA PERIMETER FENCE AND ASSOCIATED GATES AT THE COMPLETION OF THE PROJECT.
2. THE CONTRACTOR SHALL REFERENCE THE DESIGN PLANS FOR DIMENSIONS, JOINT LOCATIONS, AND INLAY SPECIFICATIONS. CONTRACTOR SHALL PROVIDE JOINTS IN WALKWAYS PER DETAILS.
3. ALL CONSTRUCTION TRAFFIC SHALL ENTER SITE FROM GREENVILLE LOOP ROAD AND GREENVILLE AVENUE UNLESS OTHERWISE APPROVED IN WRITING FROM THE OWNER'S REPRESENTATIVE FOR AN ALTERNATE POINT OF ACCESS.
4. ALL DIMENSIONS ARE IN DECIMAL FEET TO CENTERLINES, AND/OR FACE OF CURB UNLESS OTHERWISE NOTED.
5. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATES AND REPORT ANY DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO ANY CONSTRUCTION.
6. ALL WRITTEN DIMENSIONS SHALL PREVAIL. DO NOT SCALE FROM DRAWINGS.
7. ALL UTILITIES WITH SURFACE ACCESS SHALL BE LOCATED WITHIN THE PAVING PATTERN AND SHALL BE COORDINATED WITH LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION.
8. ALL ANGLES ARE 90 DEGREES UNLESS OTHERWISE NOTED.
9. ALIGN ALL JOINTS, CORNERS, AND EDGES AS SHOWN
10. ALL CURB TAPERS ARE SIX (2') FEET LONG UNLESS OTHERWISE SHOWN ON PLAN.
11. WHERE NEW SIDEWALK ADJOINS EXISTING WALK, PROVIDE EXPANSION JOINT BY DRILLING INTO THE FACE OF THE EXISTING WALK FOR PLACEMENT OF DOWELS. TIE NEW SIDEWALKS INTO NEAREST EXISTING PAVEMENT JOINT; MATCH WIDTH OF EXISTING WALKWAY.
12. MAXIMUM RUNNING SLOPE FOR WALKING SURFACES CANNOT BE GREATER THAN 1:20 AND CROSS SLOPES CANNOT BE GREATER THAN 1:48. HANDICAP SURFACE SLOPES SHALL NOT EXCEED 1:48 IN ALL DIRECTIONS.
13. SIGHT TRIANGLES - NOTHING OVER 30" HIGH SHALL BE ALLOWED WITHIN THE SIGHT DISTANCE TRIANGLES.
14. THE SITE SHALL BE FULLY STABILIZED (90% COVERAGE) PRIOR TO ISSUANCE PROJECT APPROVAL.
15. HANDICAP RAMPS SHALL BE INSTALLED PER LATEST EDITION OF THE NC BUILDING CODE AND ANSI 117.11 WITH DETECTABLE WARNING DOMES WITH A COLOR CONTRAST OF 70% MINIMUM. SEE DETAILS AND GRADING SPOT ELEVATIONS. IF THE EXISTING CONDITIONS PRECLUDE THE ABILITY TO PROVIDE A MAXIMUM SLOPE 1/12 FOR 6-FEET OR A MAXIMUM CROSS SLOPE OF 1:48 AND A 36" MINIMUM LANDING, THE CONTRACTOR SHALL NOTIFY ENGINEER OR OWNER REPRESENTATIVE PRIOR TO INSTALLATION.
16. THE TESTING AGENCY SHALL BE RESPONSIBLE FOR PROVIDING THE ASPHALT AND CONTRACTOR CERTIFICATION MEMO TO NCDOT FOR ALL ROADWAY IMPROVEMENTS WITHIN THE PUBLIC RIGHT-OF-WAY.

GRADING AND STORM DRAINAGE NOTES:

1. CONTRACTOR SHALL REPORT ANY GRADE DISCREPANCIES TO THE OWNER'S REPRESENTATIVE PRIOR TO BEGINNING CONSTRUCTION OPERATIONS.
2. THE MAXIMUM SLOPE ALONG ANY HANDICAP ACCESSIBLE PATHWAY SHALL NOT EXCEED 5.0% AND SHALL NOT EXCEED A 2.0% CROSS SLOPE. HANDICAP RAMPS INDICATED ON PLANS SHALL BE A MAXIMUM OF 1/12 SLOPES WITH A MAXIMUM RISE OF 30" BETWEEN LANDINGS.
3. ALL PROPOSED ELEVATIONS SHOWN ARE EDGE OF PAVEMENT ELEVATIONS UNLESS OTHERWISE SPECIFIED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL NEWLY CONSTRUCTED STORM DRAINAGE IMPROVEMENTS AND RECEIVING STORM DRAINAGE SYSTEMS REMAIN CLEAN OF SEDIMENT AND DEBRIS. PRIOR TO OWNER ACCEPTANCE OF SYSTEM, THE CONTRACTOR SHALL COORDINATE AND PROVIDE A VISUAL OBSERVATION VIDEO OF ALL STORM DRAINAGE IMPROVEMENTS 12" AND LARGER. THE VISUAL OBSERVATION SHALL BE PERFORMED IN THE PRESENCE OF THE OWNER'S REPRESENTATIVE. THE CONTRACTOR SHALL PROVIDE TWO (2) DVD COPIES OF THE ENTIRE DRAINAGE VISUAL OBSERVATION.
5. REFER TO THE EROSION CONTROL DETAILS SHEET FOR THE SEQUENCE OF CONSTRUCTION
6. INTERIM GRADING SHALL BE PROVIDED THAT ENSURES THE PROTECTION OF STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, AND WASHOUT.
7. INTERIM GRADING SHALL BE PROVIDED TO DIRECT WATER AWAY FROM BUILDINGS AND PREVENT PONDING.
8. PROPOSED CONTOURS ARE APPROXIMATE. SPOT ELEVATIONS AND ROADWAY PROFILES SHALL BE USED IN CASE OF DISCREPANCY.
9. PLACE BACKFILL AND FILL MATERIALS IN LAYER NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS. PLACE BACKFILL AND FILL MATERIALS EVENLY ON ALL SIDES TO REQUIRED ELEVATIONS, AND UNIFORMLY ALONG THE FULL LENGTH OF EACH STRUCTURE. COMPACT SOIL TO NOT LESS THAN 95 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 FOR EACH LAYER OF BACKFILL OR FILL MATERIAL UP TO TWO FEET OF FINISHED GRADE. COMPACT SOIL TO NOT LESS THAN 98 PERCENT OF MAXIMUM DRY UNIT WEIGHT ACCORDING TO ASTM D 698 FOR EACH LAYER OF BACKFILL OR FILL MATERIAL FOR THE FINAL TWO FEET.
10. SITE GRADING IMMEDIATELY ADJACENT TO FOUNDATION OF BUILDING SHALL SLOPE NOT LESS THAN 1/20 AWAY FOR MINIMUM DISTANCE OF 10 FEET. ALTERNATIVE METHOD SHALL BE PROVIDED TO DIVERT WATER AWAY FROM FOUNDATION VIA SWALES SLOPED AT A MINIMUM OF 2% OR IMPERVIOUS SURFACES SLOPED AWAY A MINIMUM OF 2% AWAY FROM BUILDING.
11. CONTRACTOR SHALL ADJUST RIM ELEVATIONS OF EXISTING MANHOLES, METERS, VALVES, ETC. AS REQUIRED TO MEET NEW FINISHED GRADES.
12. CONTRACTOR SHALL SLOPE GRADES TO ASSURE POSITIVE STORMWATER FLOW TO KEEP WATER FROM POOLING ALONG CURBS AND WALLS.
13. THE PROJECT IS FOUND IN ONSLOW BAY RIVER BASIN AND THE RECEIVING STREAM IS BRADLEY CREEK.
14. REFER TO SHEET L9.22 FOR STORM DRAINAGE INFORMATION.

UTILITY NOTES:

1. UNLESS OTHERWISE NOTED, ALL MANHOLES SHALL BE PRE-CAST CONCRETE STRUCTURES.
2. THE CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON SITE AND UTILITY PROVIDERS DURING CONSTRUCTION TO ENSURE SMOOTH TRANSITION BETWEEN DISCIPLINES.
3. THE CONTRACTOR SHALL COORDINATE ALL PEDESTRIAN AND VEHICULAR INTERRUPTIONS WITH OWNER'S REPRESENTATIVE AT LEAST 72 HOURS PRIOR TO BEGINNING WORK.
4. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INSIDE THE PUBLIC RIGHT OF WAY PRIOR TO RECEIPT AND COMPLIANCE WITH ALL APPLICABLE NCDOT PERMITS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FLAGGERS AND TRAFFIC CONTROL DURING ALL WORK INSIDE THE PUBLIC RIGHTS OF WAY.
5. ALL EXISTING SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM LIDAR AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. DEPTHS OF EXISTING UTILITIES SHOWN IN PROFILE VIEWS ARE BASED ON STANDARD ASSUMPTIONS. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION, DEPTH, SIZE AND MATERIAL OF ANY AND ALL SUB-SURFACE CONDITIONS REFERENCED IN THESE PLANS PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
6. ELEVATIONS OF UTILITIES ARE GIVEN TO THE EXTENT OF INFORMATION AVAILABLE. WHERE ELEVATIONS ARE NOT GIVEN AT POINTS OF EXISTING UTILITY CROSSINGS, SUCH ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND REPORTED TO THE ENGINEER. WHEN UNKNOWN LINES ARE EXPOSED, THEIR LOCATIONS AND ELEVATIONS SHALL ALSO BE REPORTED TO THE ENGINEER.
7. UNDERGROUND UTILITIES SHOWN ON THIS PLAN SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION OF PARKING AREA, DRIVES, CURB AND GUTTER OR CONCRETE WALKS / PADS. IF UTILITIES SHOWN ON THIS PLAN CANNOT BE INSTALLED PRIOR TO INSTALLATION OF IMPERVIOUS (ASPHALT / CONCRETE) CONDUIT SHALL BE INSTALLED FOR THE "FUTURE" UTILITY INSTALLATION.
8. AS-BUILT DOCUMENTATION REQUIREMENTS: PRIOR TO APPROVAL FROM LOCAL JURISDICTION OR ENGINEER THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS (IN BOTH PAPER AND ELECTRONIC FORMAT (CAD / PDF) PREPARED AND SEALED BY A PROFESSIONAL LAND SURVEYOR SHOWING ALL UTILITY INSTALLATION. HORIZONTAL AND VERTICAL INFORMATION SHALL BE PROVIDED FOR WATER, SEWER, STORM INCLUDING ALL STRUCTURES, VALVES, HYDRANTS, AND OTHER APPURTENANCES.

PROPOSED UTILITY SEPARATION:

1. SEPARATION OF SANITARY SEWERS AND STORM SEWERS:
   a. A 24" VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR BOTH THE SANITARY AND THE STORM LINES SHALL BE CONSTRUCTED OF FERROUS MATERIALS.

WATER NOTES:

1. IF SDR 9 (POLY) WATER SERVICES ARE TO BE RELOCATED/EXTENDED, THEY WILL NEED TO E REINSTALLED FROM THE WATER MAIN TO METER SETTER. IF THE WATER SERVICE IS COPPER, IT MAY BE COUPLED WITH COPPER FOR THE EXTENSION.
2. WATER METER BOXES MAY BE RAISED TO GRADE PROVIDED THE METER SETTERS REMAIN WITHIN THE METER BOX.
3. VALVE BOX PAVING RINGS ARE NOT PERMITTED. THE VALVE BOX WILL NEED TO BE ADJUSTED PER CFPUA REQUIREMENTS.

SEWER NOTES:

1. IF SEWER SERVICES ARE RELOCATED (LENGTHENED/SHORTENED) THEY WILL NEED TO BE CCTV INSPECTED. THE CCTV INSPECTION MAY BE PERFORMED AFTER 14 DAYS OR IMMEDIATELY PENDING CFPUA IS PROVIDED WITH PASSING COMPACTION TESTING RESULTS MEETING OR EXCEEDING 95% IN 2' LIFTS.
2. SEWER CLEAN OUT BOXES MAY BE RAISED TO GRADE PROVIDED THAT A 6" TO 11" AIR GAP IS MAINTAINED.
3. MANHOLE PAVING RISER RINGS INSTALLED INSIDE OF MANHOLE RINGS ARE NOT APPROVED. THE RING AND COVER MAY BE ADJUSTED USING CONCRETE RISER RINGS INSTALLED ON TOP OF MANHOLE CONE. MAXIMUM CHIMNEY HEIGHT TO BE 8". IF MORE THAN 8" OR ADJUSTMENT IS REQUIRED, THEN THE MANHOLE CONE WILL NEED TO BE REPLACED. SEE CFPUA DETAIL S-15.

SIGNAGE, STRIPING AND MARKING NOTES:

1. ALL INTERNAL SIGNAGE SHALL BE COORDINATED WITH OWNER FOR ACTUAL LOCATION AT TIME OF INSTALLATION. SIGNAGE LEADING ONTO PUBLIC THOROUGHFARE SHALL BE INSTALLED AT RIGHT OF WAY PER DOT STANDARDS
2. ALL PAVEMENT STRIPING SHALL BE THERMOPLASTIC REFLECTIVE PAINT. MATERIALS AND DIMENSIONS SHALL CONFORM TO NCDOT STANDARDS AND SPECIFICATIONS.
3. CROSSWALKS SHALL BE CONSTRUCTED OF THERMOPLASTIC MATERIALS AND CONSTRUCTED IN ACCORDANCE WITH STATE DOT SPECIFICATIONS. CONTRACTOR TO INSTALL CROSSWALKS IN SUCH A MANNER THAT CROSSWALKS ARE ALIGNED BETWEEN HANDICAP/WALKWAY ACCESS POINTS OR PERPENDICULAR TO THE ROADWAY / DRIVE LANE.

NCDOT NOTES

1. TIME RESTRICTIONS:
   a. ANY WORK REQUIRING PERSONNEL OR EQUIPMENT WITHIN 5' OF THE TRAVEL LANE ON AN UNDIVIDED ROADWAY, OR 10' OF THE TRAVEL LAND, ON A DIVIDED ROADWAY SHALL REQUIRE A LANE CLOSURE PER THE LATEST EDITION OF THE MUTCD AND THE NCDOT STANDARD SPECIFICATIONS. THE MORE STRINGENT STANDARDS SHALL APPLY.
2. CERTIFICATION MEMO:
   a. UPON COMPLETION OF CONSTRUCTION, A CERTIFICATION MEMO THAT HAS BEEN SIGNED AND SEALED AS APPROPRIATE UNDER G.S. 89C-16 BY A NORTH CAROLINA PROFESSIONAL ENGINEER OF PROFESSIONAL LAND SURVEYOR, SHALL BE SUBMITTED TO THE DISTRICT ENGINEER PRIOR TO OPENING THE ACCESS CONNECTION FOR PUBLIC USE. SUPPORTING DOCUMENTS SHALL BE ATTACHED CERTIFYING THAT IMPROVEMENTS MEET THE APPROVED PLANS AND NCDOT STANDARDS. ALL DOCUMENTATION MUST BE DATED AND INITIALED BY THE CONTRACTOR. VERIFICATION WILL INCLUDE QMS FORMS (QMS-MV1 AND QMS-MV2), INSPECTION REPORTS, TESTING REPORTS, OR ANY SUPPORTING DOCUMENTATION AND CALCULATIONS. VERIFICATION WILL COVER, BUT IS NOT LIMITED TO: SUB-GRADE, PAVEMENT STRUCTURE, DRAINAGE, AND TRAFFIC CONTROL ITEMS.

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PROJECT #: L21014

Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
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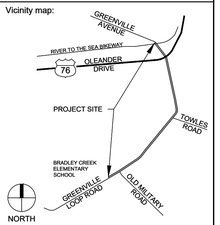
Vicinity map:



Key map:

Seal:

10.09.2023

10.09.2023

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

GENERAL NOTES

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L0.10

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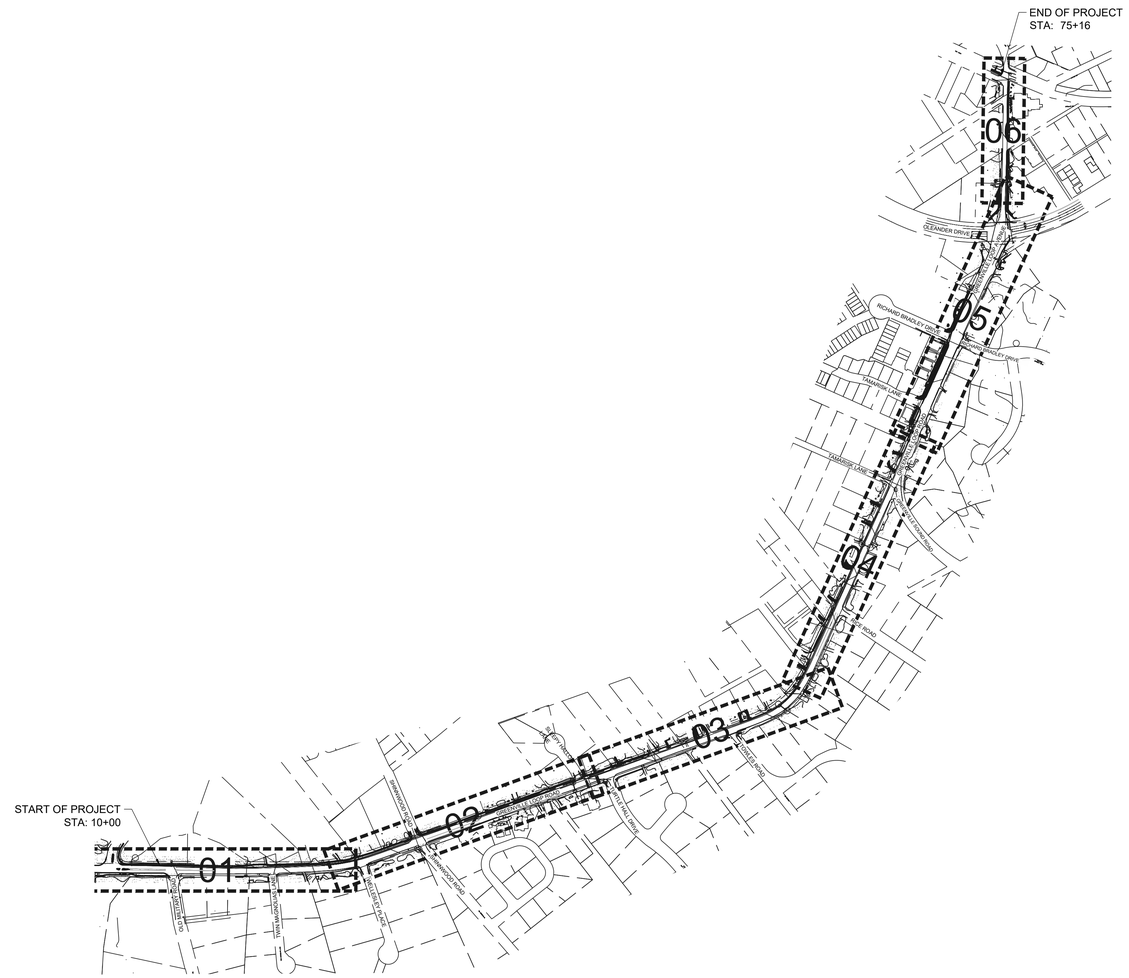

SURVEY LEGEND

	SURVEY CONTROL POINT	MH	MANHOLE
EIP	EXISTING IRON PIPE	TS	TRAFFIC SIGNAL BOX
ECM	EXISTING CONCRETE MONUMENT		TRAFFIC SIGNAL POST
	COMPUTED POINT	MW	MONITORING WELL
D	STORM DRAIN MANHOLE	BOR	BORING LOCATION
	STORM DRAIN CURB INLET		BOLLARD
S	SANITARY SEWER MANHOLE		SIGN
	SANITARY SEWER CLEANOUT	FF=267.18'	FINISHED FLOOR ELEVATION
	SANITARY FORCEMAIN VALVE		DECIDUOUS TREE
	HYDRANT		EVERGREEN TREE
WV	WATER VALVE		BUSH
WM	WATER METER	X	WIRE FENCE
	WATER MANHOLE		CHAIN LINK FENCE
W	WATER VAULT	T	UNDERGROUND TELEPHONE LINE
	WELL	FO	UNDERGROUND FIBER OPTIC LINE
GV	GAS VALVE	G	UNDERGROUND GAS LINE
GM	GAS METER	E	UNDERGROUND ELECTRIC LINE
	TELEPHONE MANHOLE	W	UNDERGROUND WATER LINE
TPED	TELEPHONE PEDESTAL	SS	SANITARY SEWER LINE
	TV MANHOLE		STORM DRAIN LINE
CATV	TV PEDESTAL	OHW	OVERHEAD WIRES
FOWP	FIBER OPTIC WITNESS POST	U	UNIDENTIFIED LINE
FO	FIBER OPTIC BOX		UNKNOWN DESTINATION
	ELECTRIC MANHOLE		CONCRETE SURFACE
EM	ELECTRIC METER	DIP	DUCTILE IRON PIPE
EB	ELECTRIC BOX	PVC	POLYVINYL CHLORIDE PIPE
	UTILITY POLE	HDPE	HIGH-DENSITY POLYETHYLENE PIPE
	GUY POLE	RCP	REINFORCED CONCRETE PIPE
	GUY WIRE	CMP	CORRUGATED METAL PIPE
	LIGHT POLE	CB	CATCH BASIN

NOTES:

1. SEE SHEET L0.10 FOR GENERAL AND EXISTING CONDITIONS NOTES.

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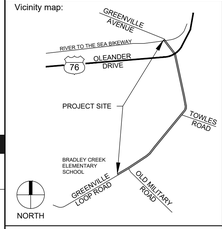
Vicinity map:



Key map:

Seal:

0 150 300 600

SCALE: 1" = 300'

NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
----	----	----

Title:

OVERALL SECTION 3 EXISTING CONDITIONS PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: ----
Approved by: ----

Sheet #:

L1.00

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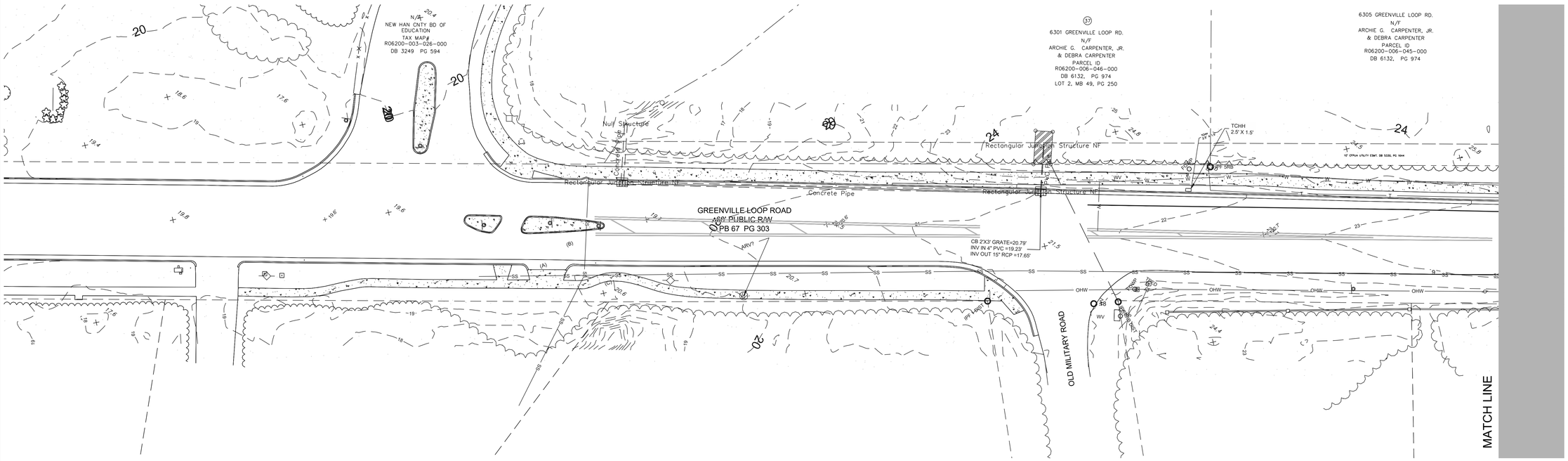
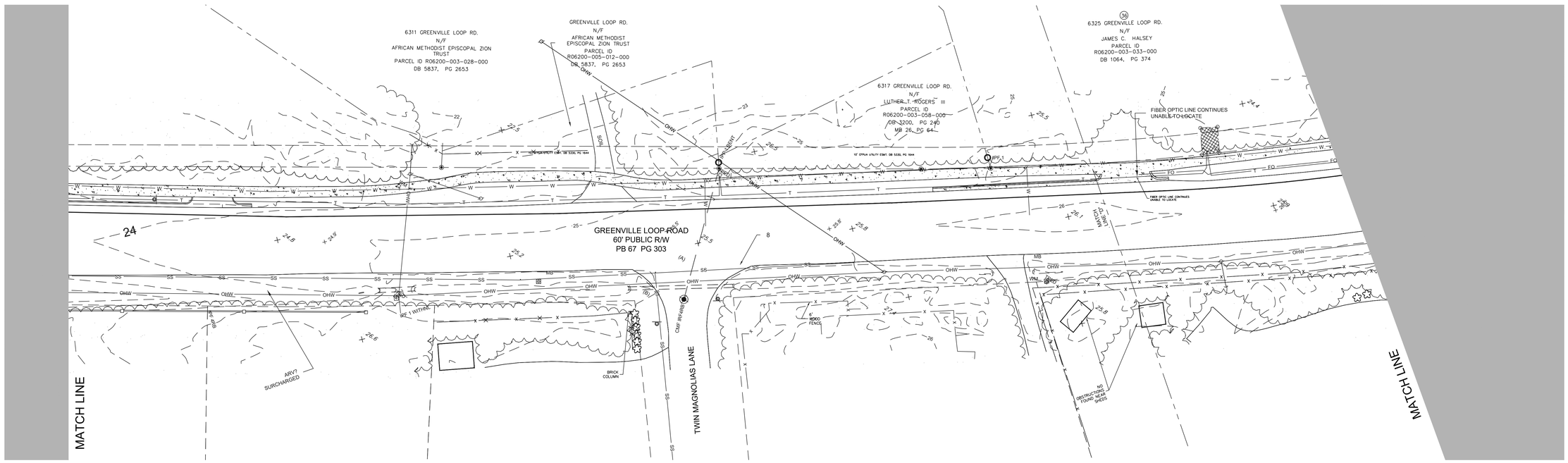
NOTE:
REFER TO SHEET L1.00 FOR LEGEND
REFER TO SHEET L0.10 FOR GENERAL NOTES





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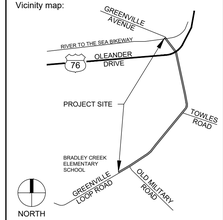
Vicinity map:



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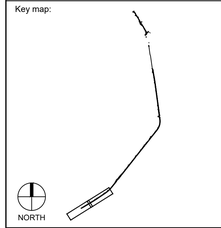

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 EXISTING CONDITIONS PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: ----
Approved by: ----
Sheet #: L1.01

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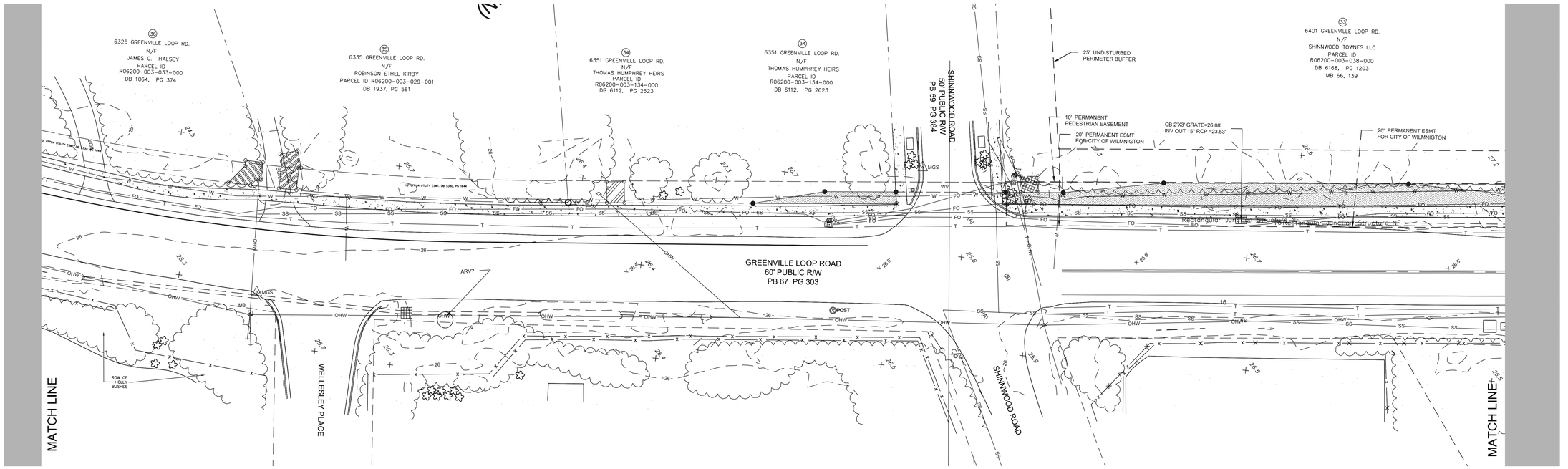
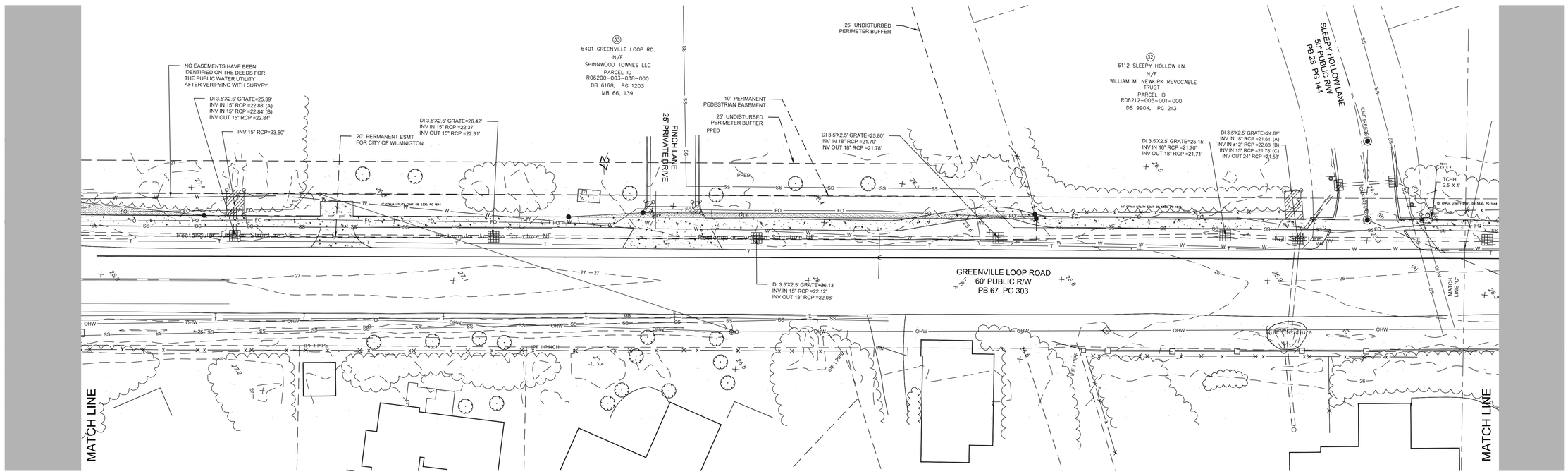
NOTE:
REFER TO SHEET L1.00 FOR LEGEND
REFER TO SHEET L0.10 FOR GENERAL NOTES





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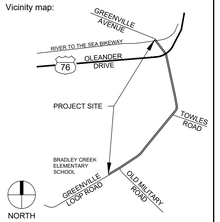
Vicinity map:



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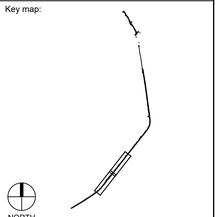

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN

0 10 20 40
SCALE: 1"=20' NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

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No.	Date	Description
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Title:

ENLARGED SECTION 3 EXISTING CONDITIONS PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: ----
Approved by: ----
Sheet #: L1.02

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NOTE:
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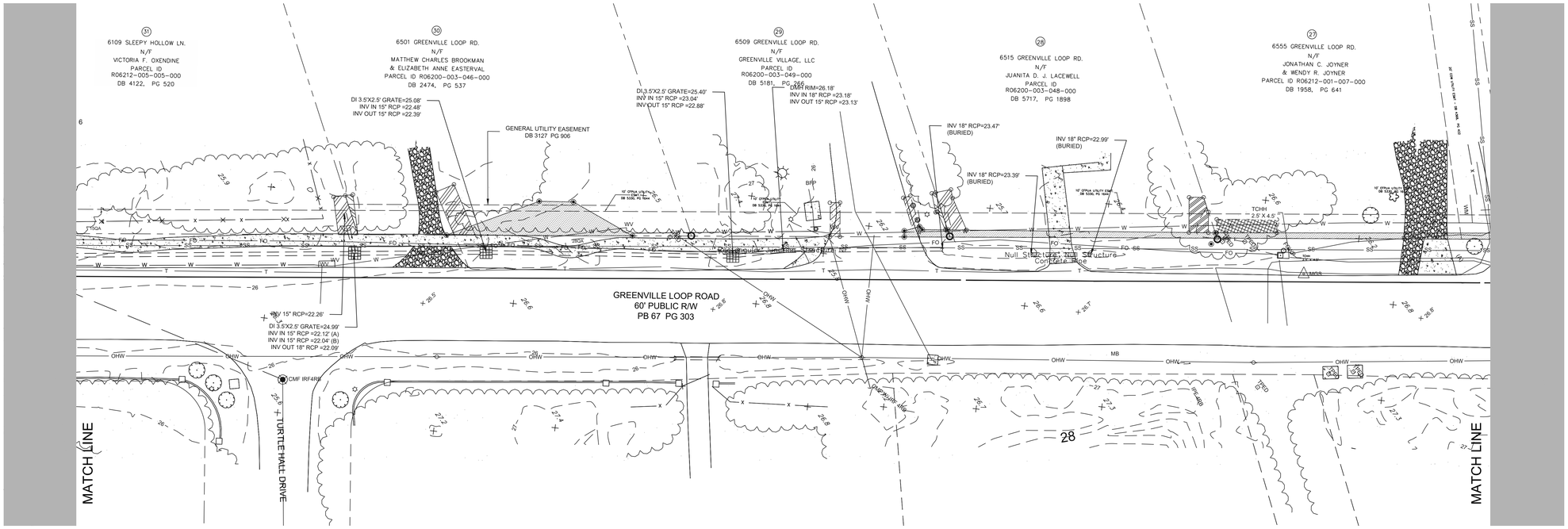
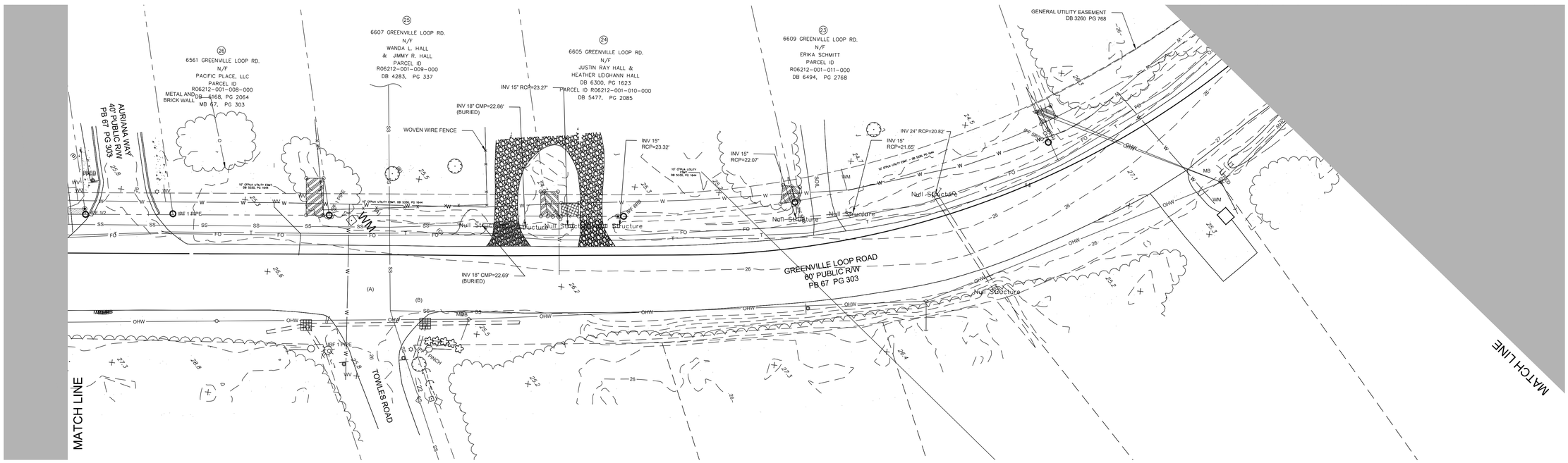
REFER TO SHEET L0.10 FOR GENERAL NOTES





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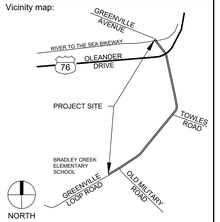
Vicinity map:



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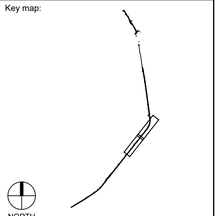

Seal:

0 10 20 40
SCALE: 1"=20' NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 EXISTING CONDITIONS PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: ----
Approved by: ----
Sheet #: L1.03

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NOTE:
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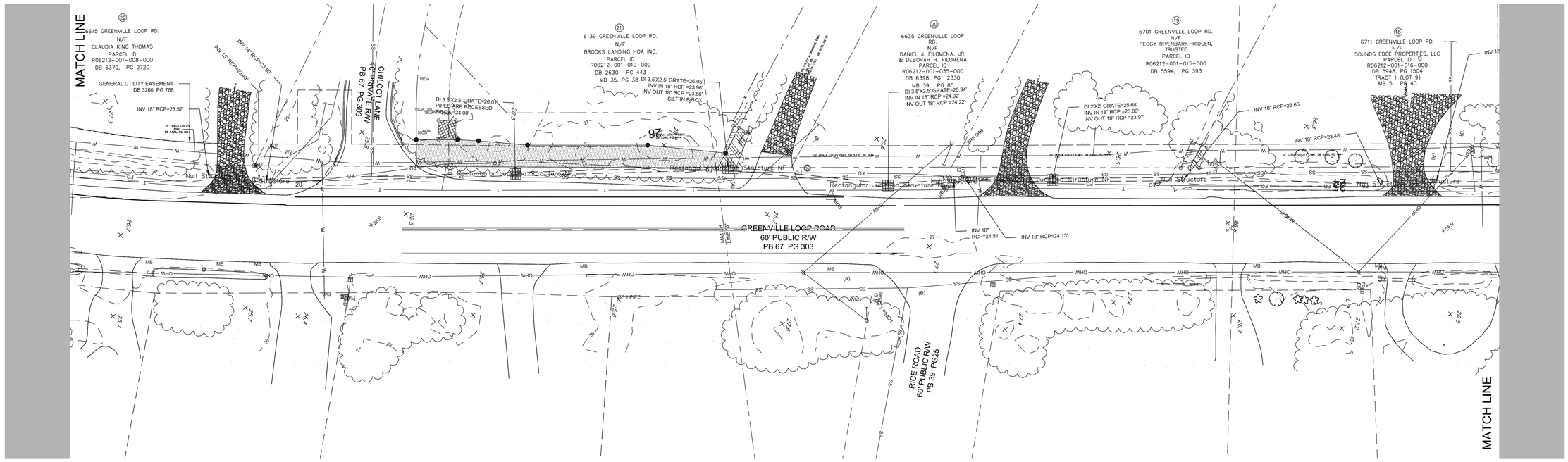
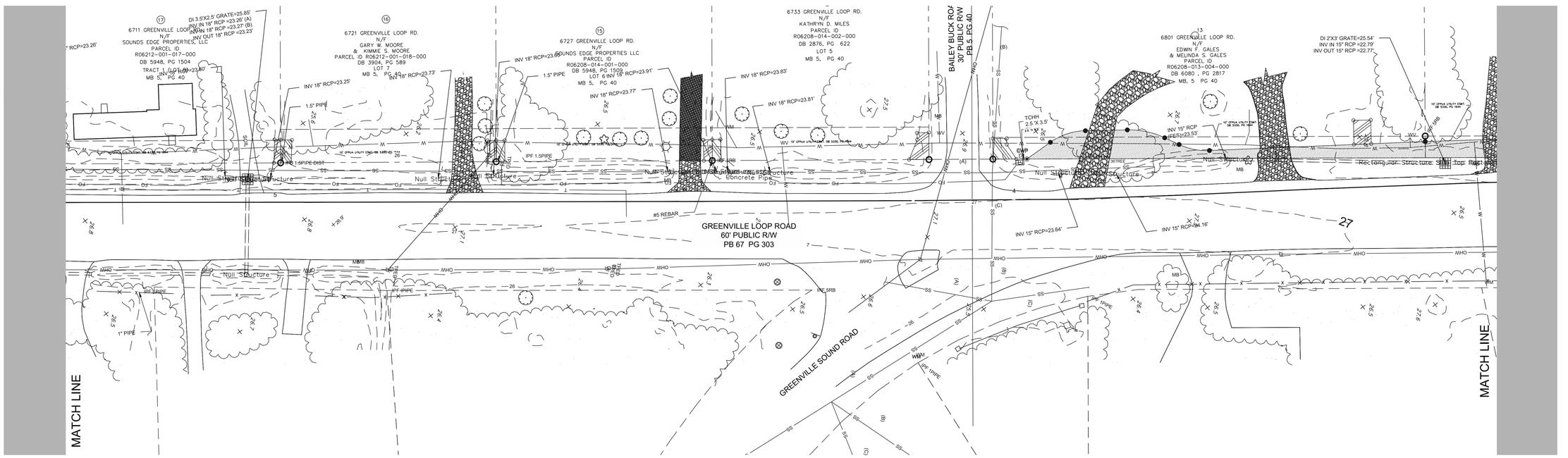
REFER TO SHEET L0.10 FOR GENERAL NOTES





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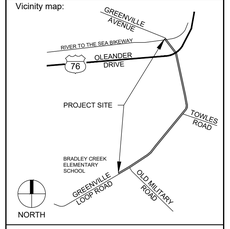
Vicinity map:



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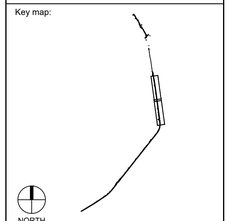

Seal:

0 10 20 40
SCALE: 1"=20' NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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Title:

ENLARGED SECTION 3 EXISTING CONDITIONS PLAN

Project number: L21014
Issued Date: 2025.04.09
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Approved by: ----
Sheet #: L1.04

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NOTE:
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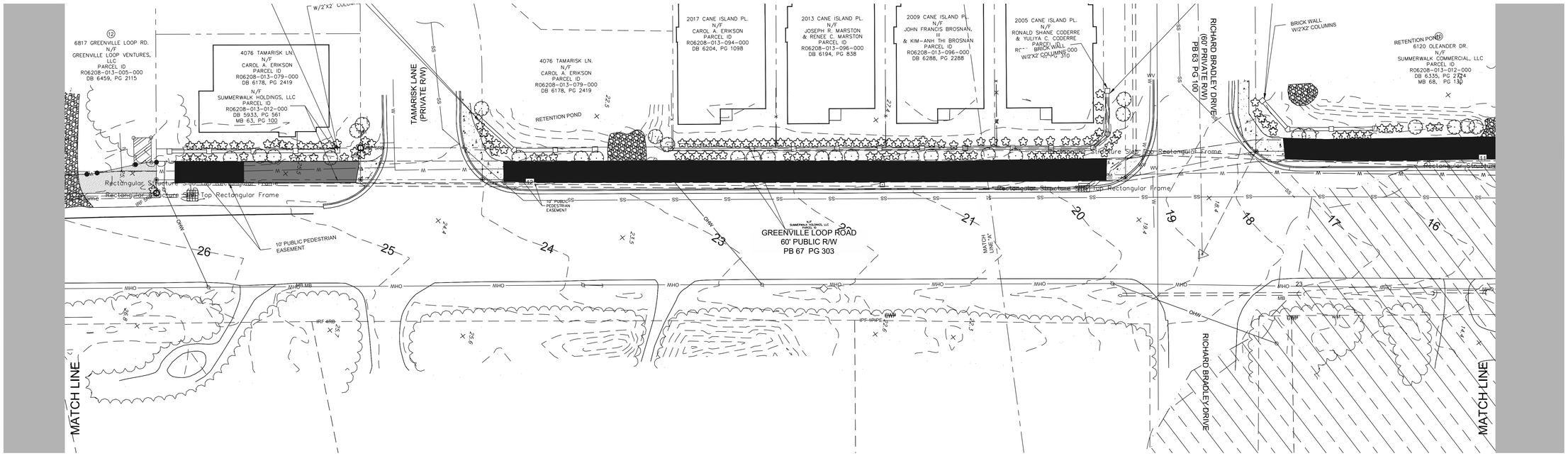
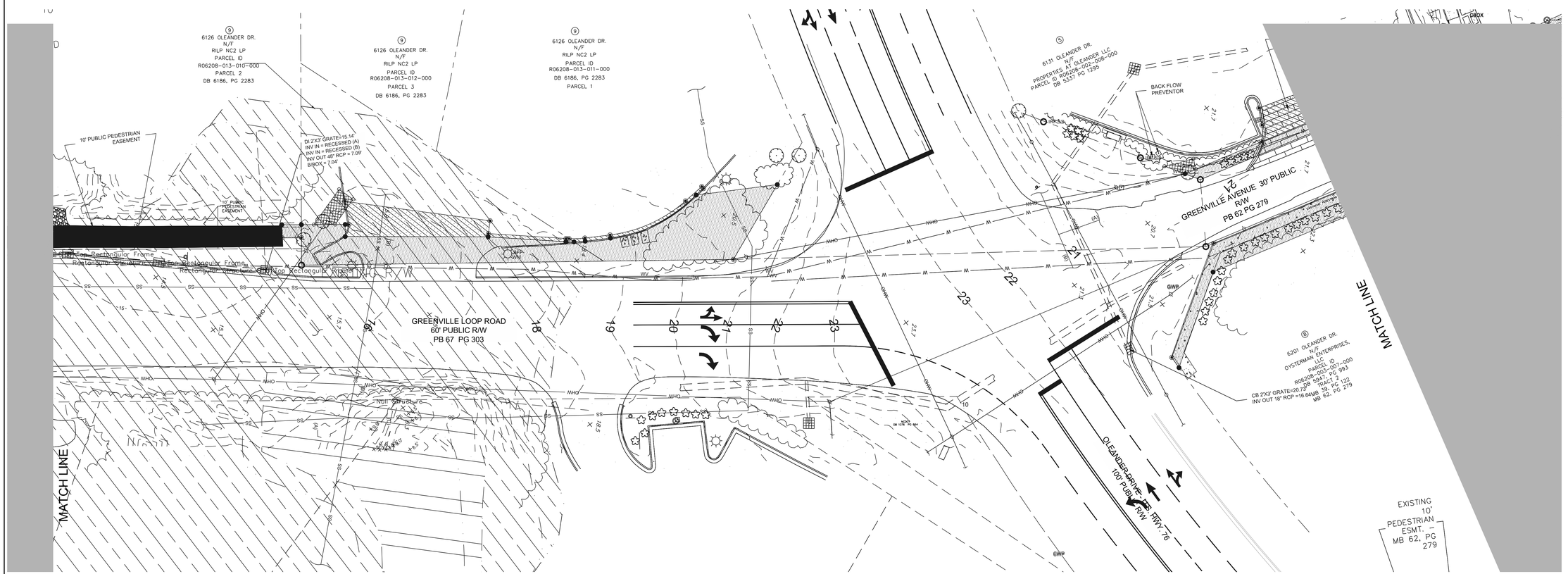
REFER TO SHEET L0.10 FOR GENERAL NOTES





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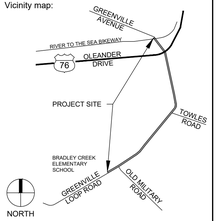
Vicinity map:



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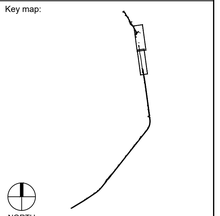

Seal:

0 10 20 40
SCALE: 1"=20' NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

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BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 EXISTING CONDITIONS PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: ----
Approved by: ----
Sheet #: L1.05

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NOTE:
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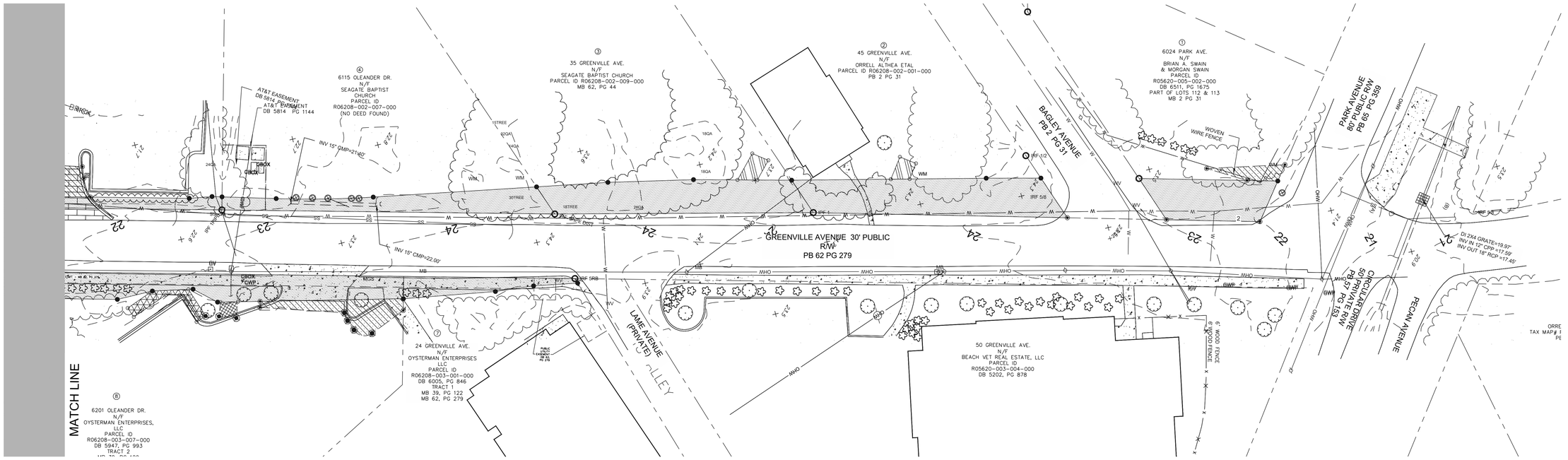

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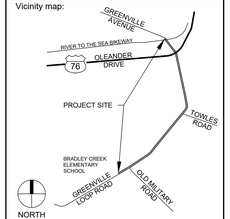
Vicinity map:



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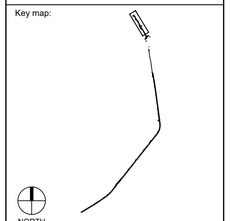

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN

0 10 20 40
SCALE: 1"=20' NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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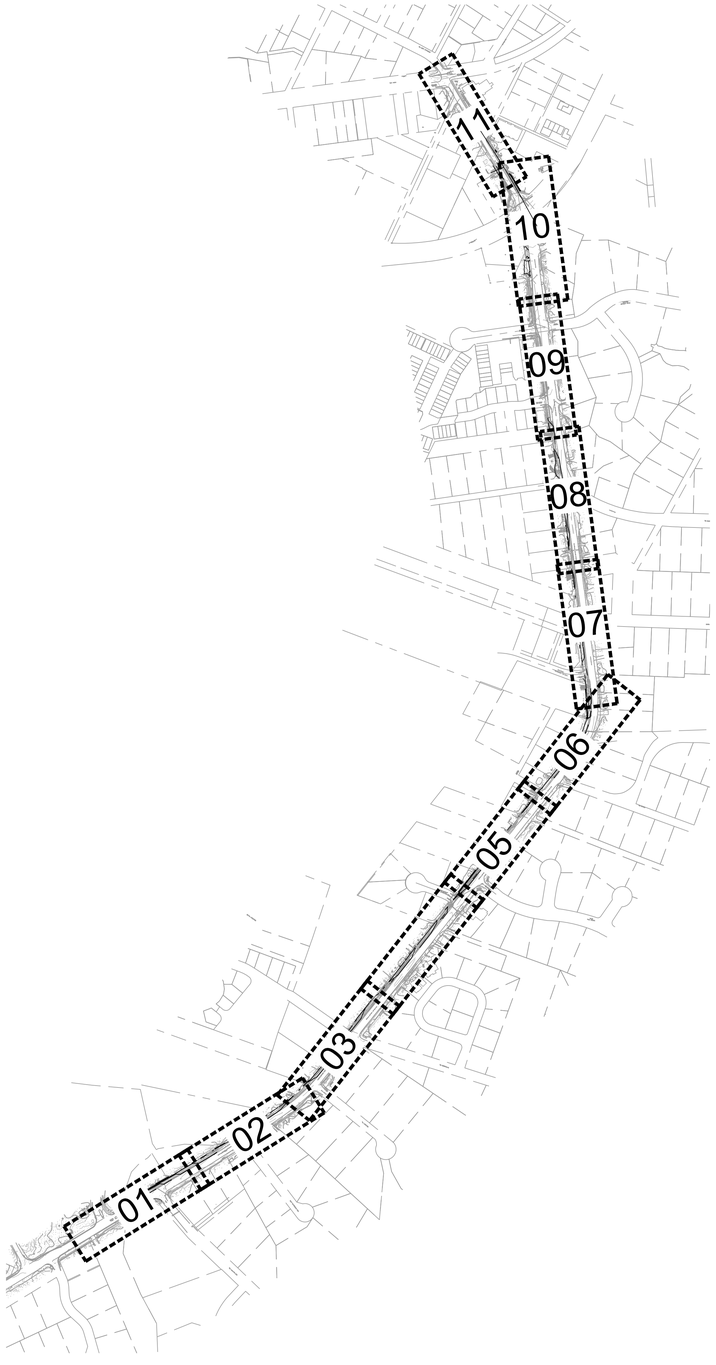
Title:

ENLARGED SECTION 3 EXISTING CONDITIONS PLAN

Project number: L21014 Sheet #:
Issued Date: 2025.04.09
Drawn by: ----
Approved by: ----

L1.06

\\stewart-eng.local\stewart\FPD\Projects\2021\21014 - greenville loop trail section 3\DWGS\3-CD\3-Sheets\L21014-L1.00 Existing Conditions Plan.dwg Apr 09, 2025 - 2:29pm



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Client:

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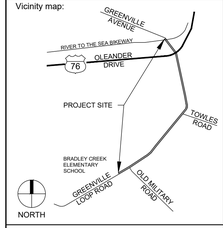
Vicinity map:



Key map:

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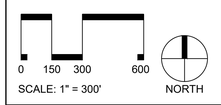

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

OVERALL SECTION 3 DEMOLITION PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: ----
Approved by: ----
Sheet #: L2.00

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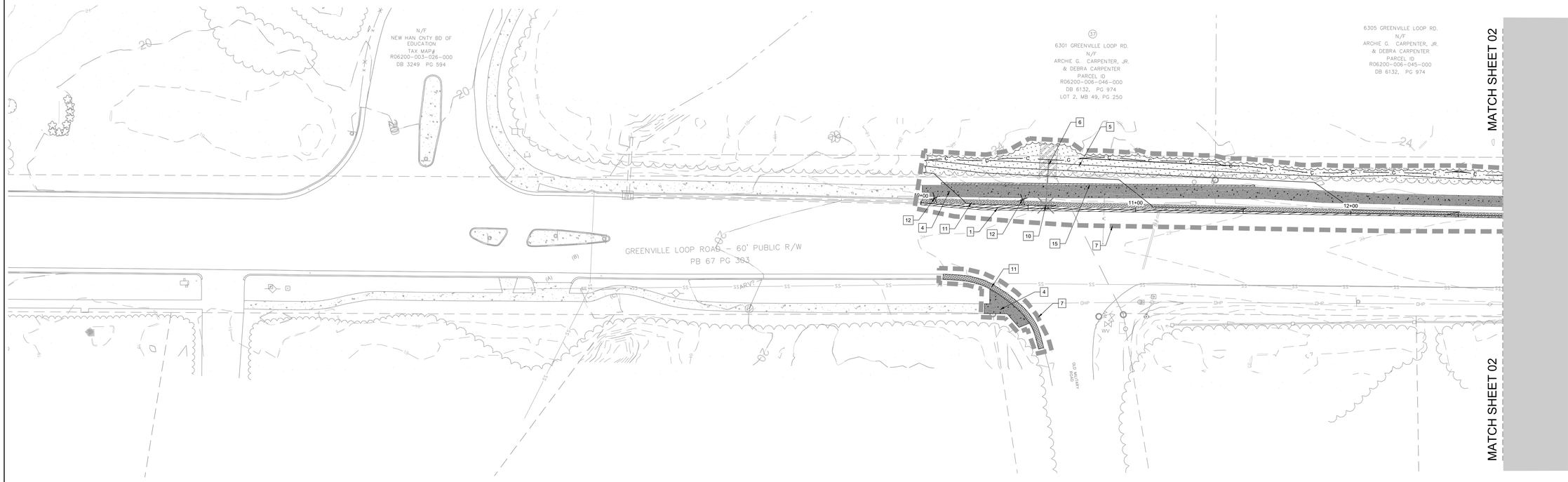
DEMOLITION LEGEND

KEY NOTE	SYMBOL	DESCRIPTION	DETAIL REFERENCE
1		REMOVE ASPHALT	N/A
2		REMOVE GRAVEL	N/A
3		REMOVE BRICK	N/A
4		REMOVE CONCRETE	N/A
5		REMOVE VEGETATION	N/A
6		REMOVE STORM DRAINAGE	N/A
7		LIMITS OF DISTURBANCE	N/A
8		COORDINATE UTILITY/LIGHT POLE RELOCATION	N/A
9		REMOVE TREE	N/A
10		REMOVE STORM STRUCTURE	N/A
11		REMOVE CURB & GUTTER	N/A
12		RELOCATE SIGN	N/A
13		RELOCATE MAILBOX	N/A
14		RELOCATE TELECOM PEDESTAL	N/A
15		REMOVE WALL	N/A
16		REMOVE FENCE	N/A
17		REMOVE PAVEMENT MARKING	N/A
18	—— TP ——	TREE PROTECTION	6-7/L9.01
19		ASPHALT TO BE MILLED	N/A

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND DEMOLITION NOTES.



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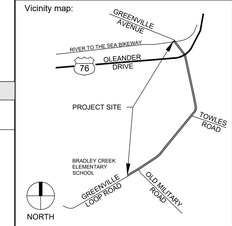
Vicinity map:



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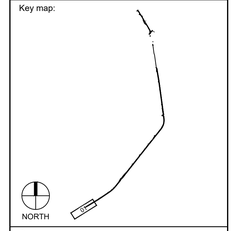

Seal:

0 10 20 40

SCALE: 1" = 20'

NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 DEMOLITION PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD

Sheet #: L2.01

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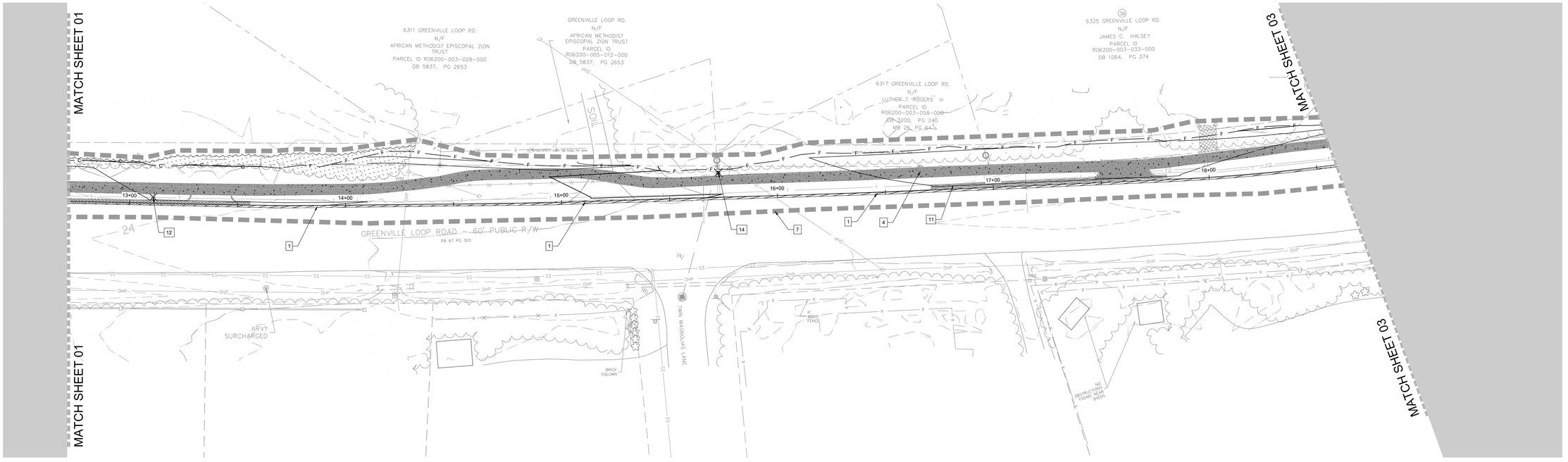
DEMOLITION LEGEND

KEY NOTE	SYMBOL	DESCRIPTION	DETAIL REFERENCE
1		REMOVE ASPHALT	N/A
2		REMOVE GRAVEL	N/A
3		REMOVE BRICK	N/A
4		REMOVE CONCRETE	N/A
5		REMOVE VEGETATION	N/A
6		REMOVE STORM DRAINAGE	N/A
7		LIMITS OF DISTURBANCE	N/A
8		COORDINATE UTILITY/LIGHT POLE RELOCATION	N/A
9		REMOVE TREE	N/A
10		REMOVE STORM STRUCTURE	N/A
11		REMOVE CURB & GUTTER	N/A
12		RELOCATE SIGN	N/A
13		RELOCATE MAILBOX	N/A
14		RELOCATE TELECOM PEDESTAL	N/A
15		REMOVE WALL	N/A
16		REMOVE FENCE	N/A
17		REMOVE PAVEMENT MARKING	N/A
18	TP	TREE PROTECTION	6-7/L9.01
19		ASPHALT TO BE MILLED	N/A

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND DEMOLITION NOTES.



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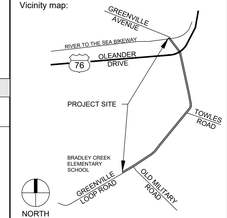
Vicinity map:



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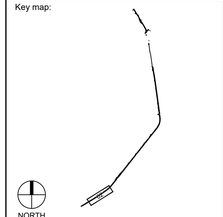

Seal:

10.09.2023

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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ENLARGED SECTION 3 DEMOLITION PLAN

Project number: L21014
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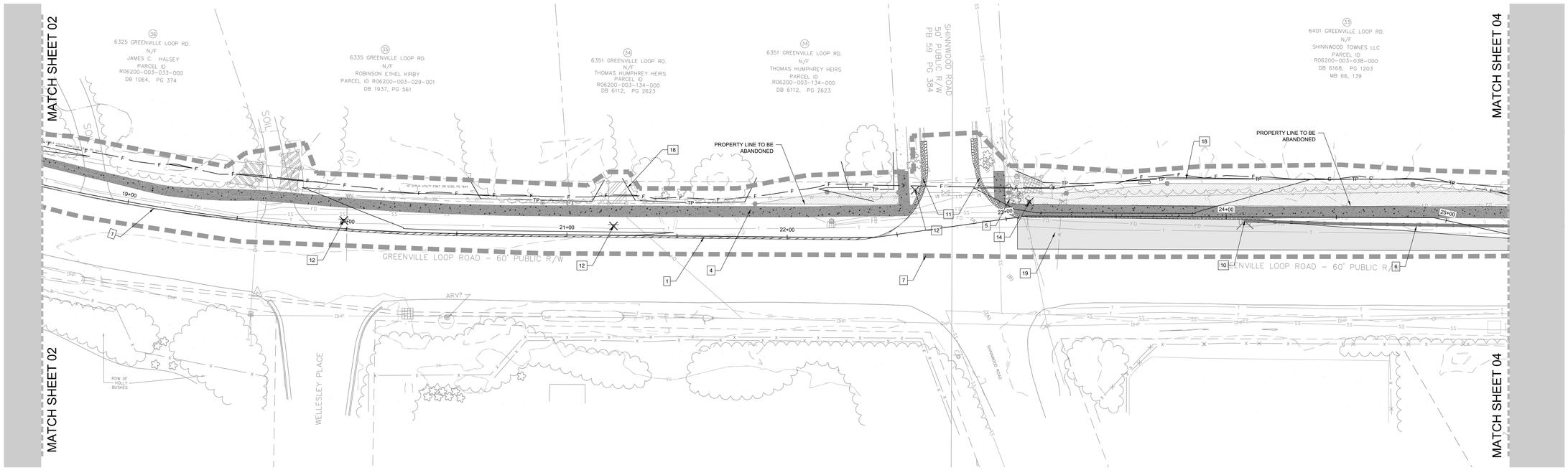
DEMOLITION LEGEND

KEY NOTE	SYMBOL	DESCRIPTION	DETAIL REFERENCE
1		REMOVE ASPHALT	N/A
2		REMOVE GRAVEL	N/A
3		REMOVE BRICK	N/A
4		REMOVE CONCRETE	N/A
5		REMOVE VEGETATION	N/A
6		REMOVE STORM DRAINAGE	N/A
7		LIMITS OF DISTURBANCE	N/A
8		COORDINATE UTILITY/LIGHT POLE RELOCATION	N/A
9		REMOVE TREE	N/A
10		REMOVE STORM STRUCTURE	N/A
11		REMOVE CURB & GUTTER	N/A
12		RELOCATE SIGN	N/A
13		RELOCATE MAILBOX	N/A
14		RELOCATE TELECOM PEDESTAL	N/A
15		REMOVE WALL	N/A
16		REMOVE FENCE	N/A
17		REMOVE PAVEMENT MARKING	N/A
18	TP	TREE PROTECTION	6-7/L9.01
19		ASPHALT TO BE MILLED	N/A

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND DEMOLITION NOTES.



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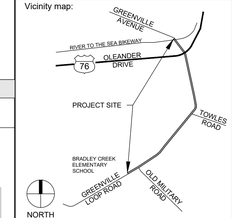

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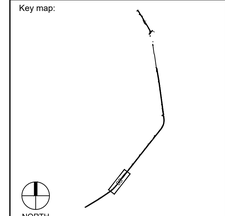

Seal:

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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Title:

ENLARGED SECTION 3 DEMOLITION PLAN

Project number: L21014
Issued Date: 2025.04.09
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Approved by: TD
Sheet #: L2.03

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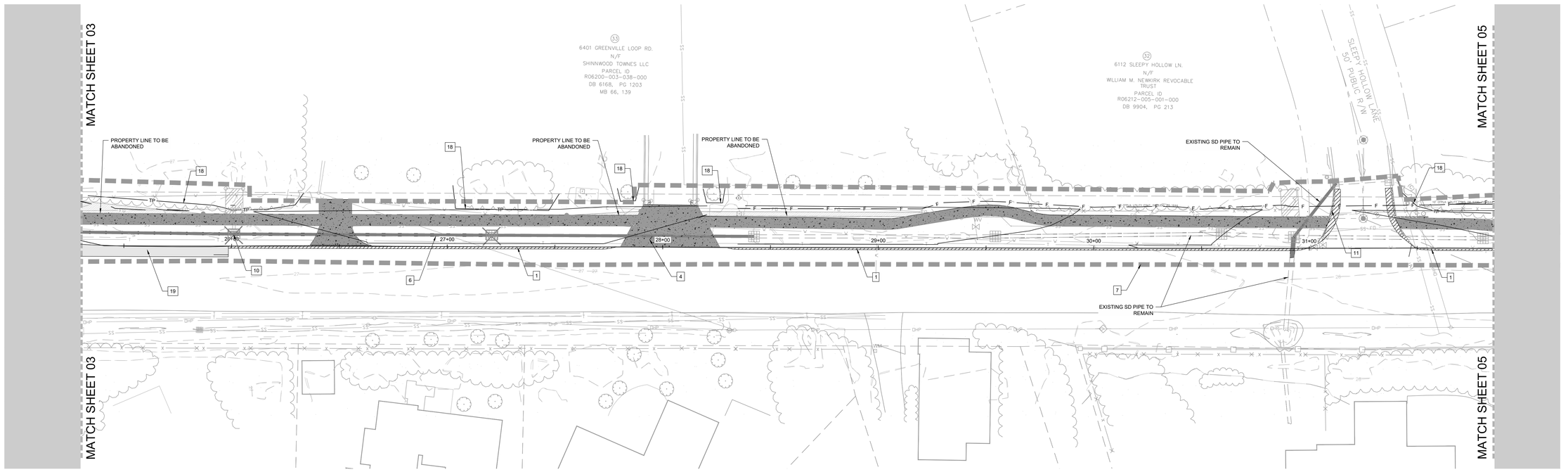
DEMOLITION LEGEND

KEY NOTE	SYMBOL	DESCRIPTION	DETAIL REFERENCE
1		REMOVE ASPHALT	N/A
2		REMOVE GRAVEL	N/A
3		REMOVE BRICK	N/A
4		REMOVE CONCRETE	N/A
5		REMOVE VEGETATION	N/A
6		REMOVE STORM DRAINAGE	N/A
7		LIMITS OF DISTURBANCE	N/A
8		COORDINATE UTILITY/LIGHT POLE RELOCATION	N/A
9		REMOVE TREE	N/A
10		REMOVE STORM STRUCTURE	N/A
11		REMOVE CURB & GUTTER	N/A
12		RELOCATE SIGN	N/A
13		RELOCATE MAILBOX	N/A
14		RELOCATE TELECOM PEDESTAL	N/A
15		REMOVE WALL	N/A
16		REMOVE FENCE	N/A
17		REMOVE PAVEMENT MARKING	N/A
18	TP	TREE PROTECTION	6-7/L9.01
19		ASPHALT TO BE MILLED	N/A

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND DEMOLITION NOTES.



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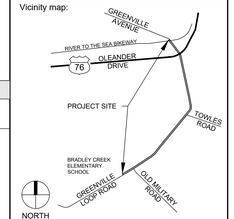

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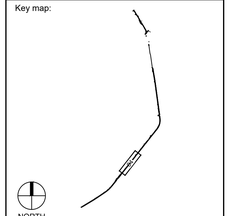

Seal:

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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Title:

ENLARGED SECTION 3 DEMOLITION PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
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Sheet #: L2.04

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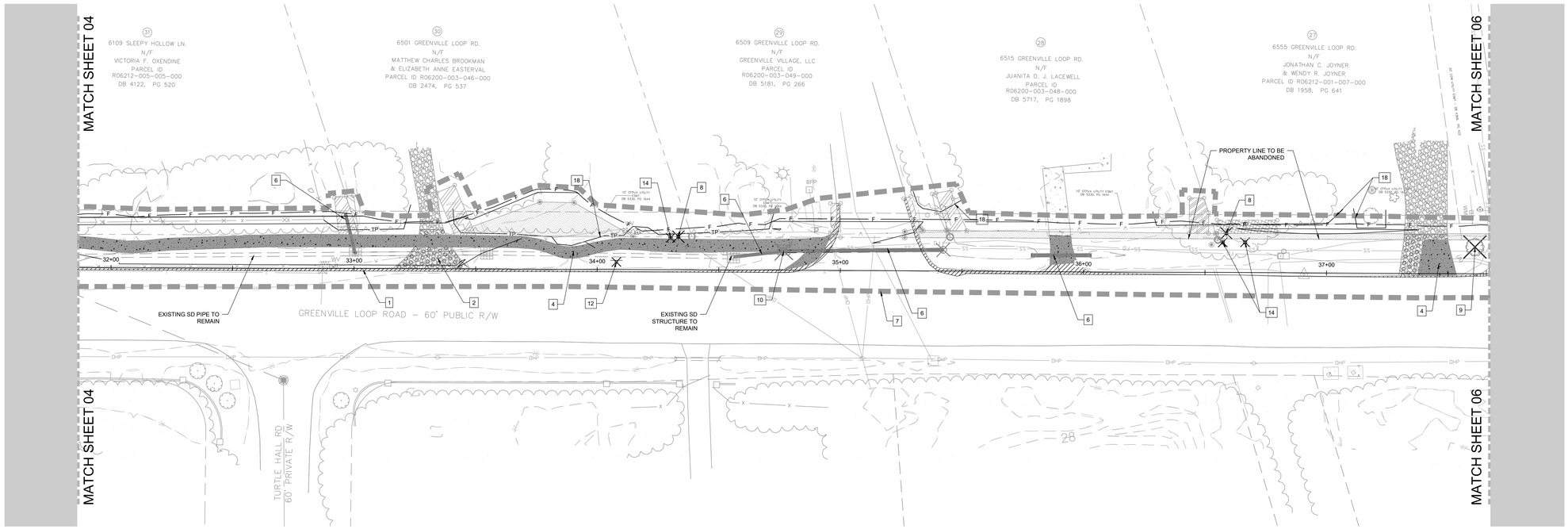
DEMOLITION LEGEND

KEY NOTE	SYMBOL	DESCRIPTION	DETAIL REFERENCE
1		REMOVE ASPHALT	N/A
2		REMOVE GRAVEL	N/A
3		REMOVE BRICK	N/A
4		REMOVE CONCRETE	N/A
5		REMOVE VEGETATION	N/A
6		REMOVE STORM DRAINAGE	N/A
7		LIMITS OF DISTURBANCE	N/A
8		COORDINATE UTILITY/LIGHT POLE RELOCATION	N/A
9		REMOVE TREE	N/A
10		REMOVE STORM STRUCTURE	N/A
11		REMOVE CURB & GUTTER	N/A
12		RELOCATE SIGN	N/A
13		RELOCATE MAILBOX	N/A
14		RELOCATE TELECOM PEDESTAL	N/A
15		REMOVE WALL	N/A
16		REMOVE FENCE	N/A
17		REMOVE PAVEMENT MARKING	N/A
18	TP	TREE PROTECTION	6-7/L9.01
19		ASPHALT TO BE MILLED	N/A

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND DEMOLITION NOTES.



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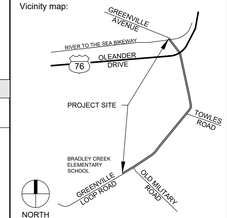
Vicinity map:



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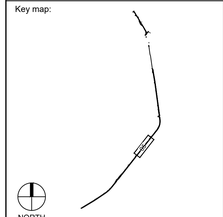

Seal:

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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ENLARGED SECTION 3 DEMOLITION PLAN

Project number: L21014
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Approved by: TD
Sheet #: L2.05

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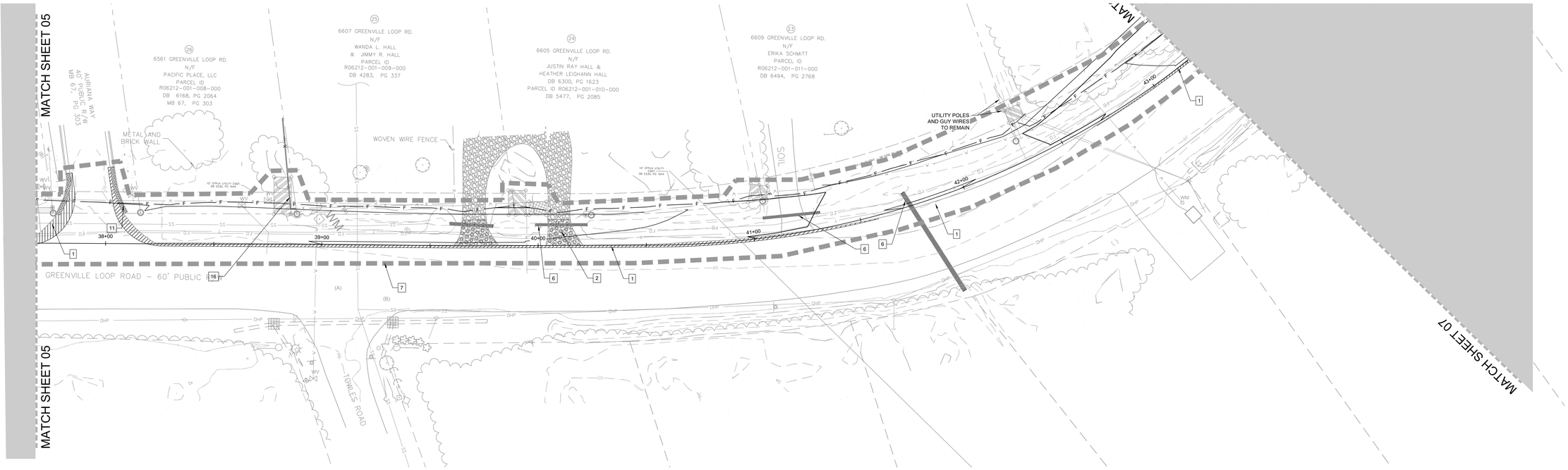
DEMOLITION LEGEND

KEY NOTE	SYMBOL	DESCRIPTION	DETAIL REFERENCE
1		REMOVE ASPHALT	N/A
2		REMOVE GRAVEL	N/A
3		REMOVE BRICK	N/A
4		REMOVE CONCRETE	N/A
5		REMOVE VEGETATION	N/A
6		REMOVE STORM DRAINAGE	N/A
7		LIMITS OF DISTURBANCE	N/A
8		COORDINATE UTILITY/LIGHT POLE RELOCATION	N/A
9		REMOVE TREE	N/A
10		REMOVE STORM STRUCTURE	N/A
11		REMOVE CURB & GUTTER	N/A
12		RELOCATE SIGN	N/A
13		RELOCATE MAILBOX	N/A
14		RELOCATE TELECOM PEDESTAL	N/A
15		REMOVE WALL	N/A
16		REMOVE FENCE	N/A
17		REMOVE PAVEMENT MARKING	N/A
18	TP	TREE PROTECTION	6-7/L9.01
19		ASPHALT TO BE MILLED	N/A

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND DEMOLITION NOTES.



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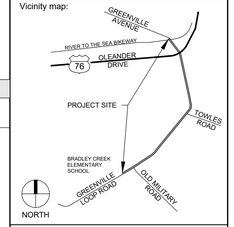
Vicinity map:



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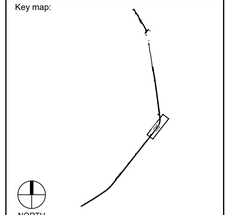

Seal:

0 ## ## ## SCALE: 1" = ### NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 DEMOLITION PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L2.06

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DEMOLITION LEGEND

KEY NOTE	SYMBOL	DESCRIPTION	DETAIL REFERENCE
1		REMOVE ASPHALT	N/A
2		REMOVE GRAVEL	N/A
3		REMOVE BRICK	N/A
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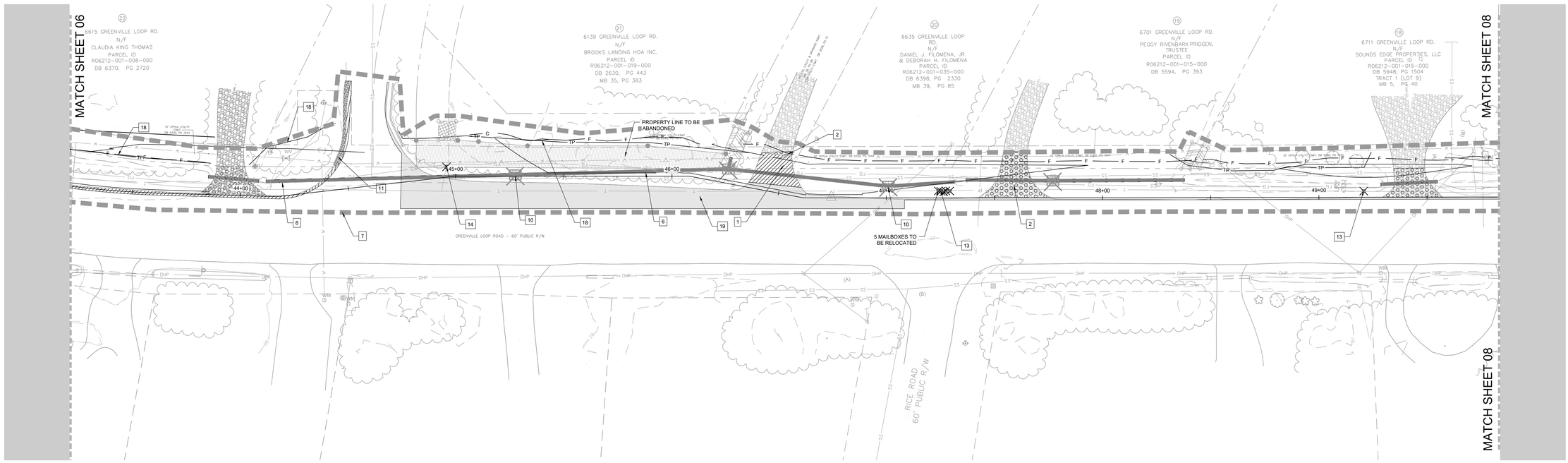
16		REMOVE FENCE	N/A
17		REMOVE PAVEMENT MARKING	N/A
18	TP	TREE PROTECTION	6-7/L9.01
19		ASPHALT TO BE MILLED	N/A

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND DEMOLITION NOTES.



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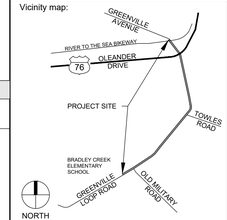
Vicinity map:



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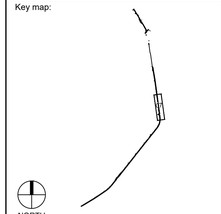

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN 10.09.2023

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SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 DEMOLITION PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L2.07

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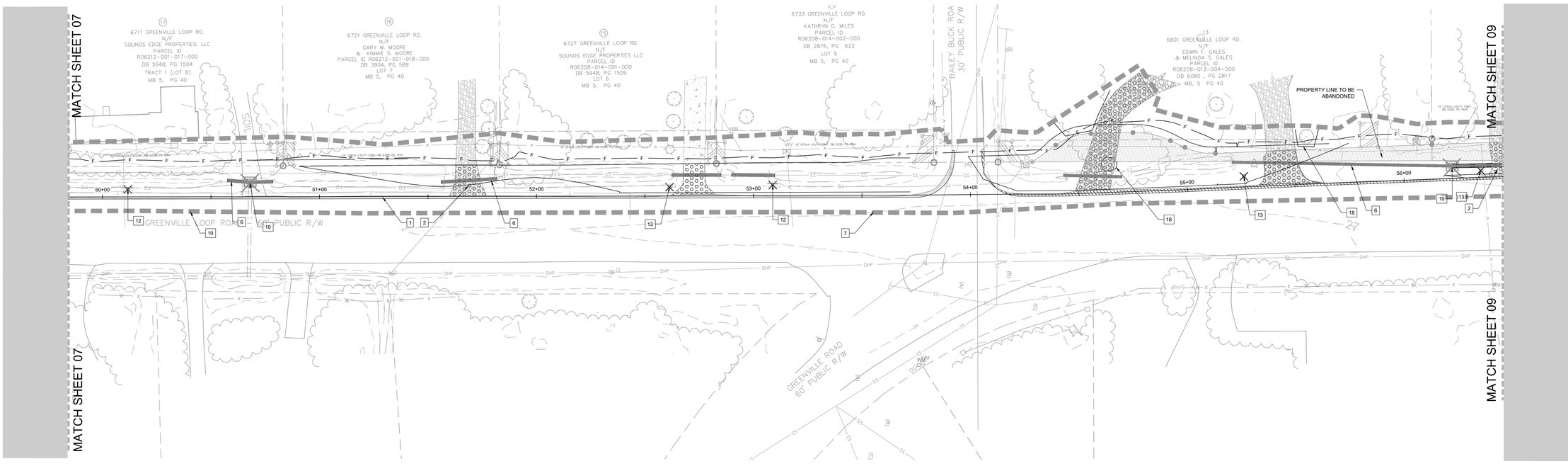
DEMOLITION LEGEND

KEY NOTE	SYMBOL	DESCRIPTION	DETAIL REFERENCE
1		REMOVE ASPHALT	N/A
2		REMOVE GRAVEL	N/A
3		REMOVE BRICK	N/A
4		REMOVE CONCRETE	N/A
5		REMOVE VEGETATION	N/A
6		REMOVE STORM DRAINAGE	N/A
7		LIMITS OF DISTURBANCE	N/A
8		COORDINATE UTILITY/LIGHT POLE RELOCATION	N/A
9		REMOVE TREE	N/A
10		REMOVE STORM STRUCTURE	N/A
11		REMOVE CURB & GUTTER	N/A
12		RELOCATE SIGN	N/A
13		RELOCATE MAILBOX	N/A
14		RELOCATE TELECOM PEDESTAL	N/A
15		REMOVE WALL	N/A
16		REMOVE FENCE	N/A
17		REMOVE PAVEMENT MARKING	N/A
18	TP	TREE PROTECTION	6-7/L9.01
19		ASPHALT TO BE MILLED	N/A

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND DEMOLITION NOTES.



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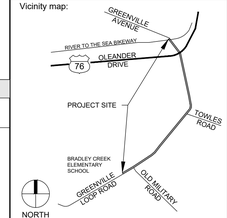

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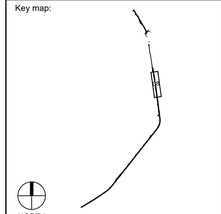

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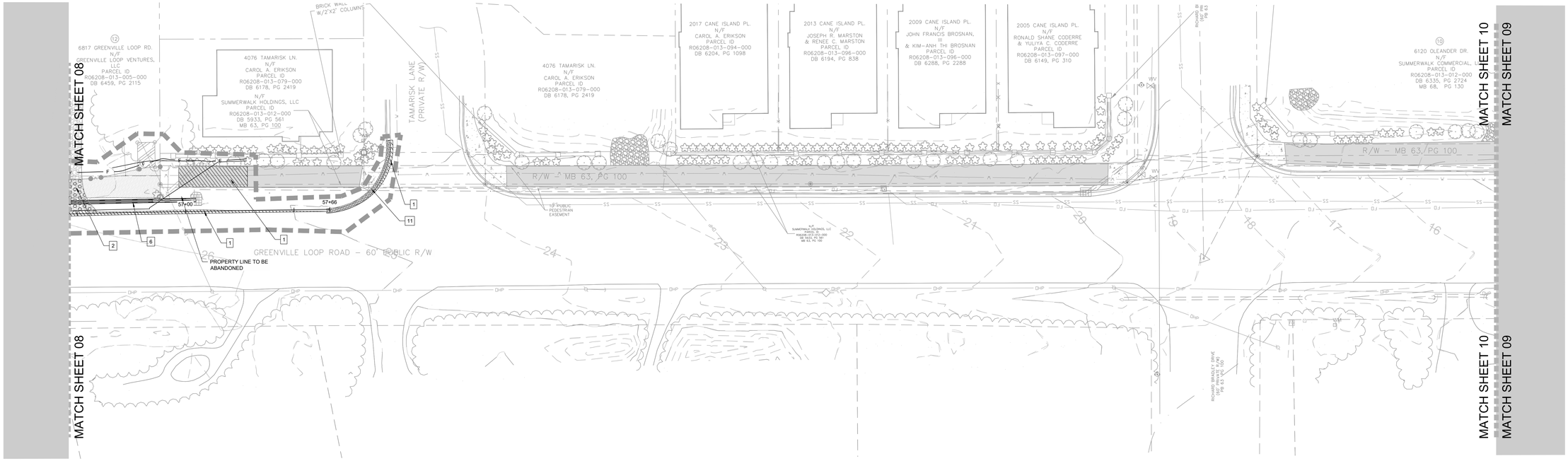

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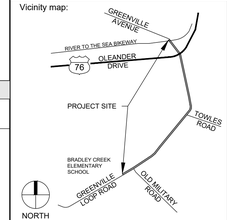

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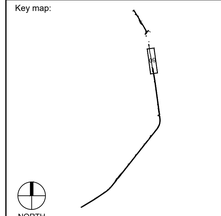

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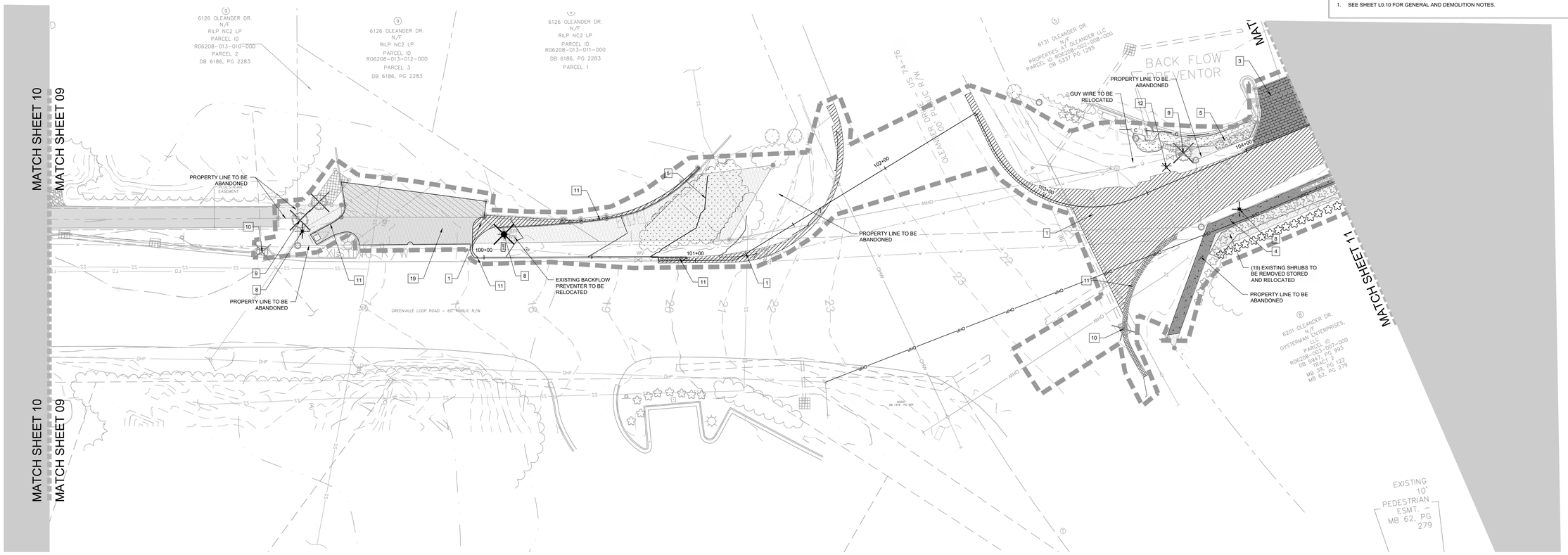

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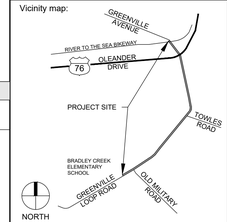

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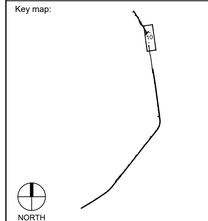

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DEMOLITION LEGEND

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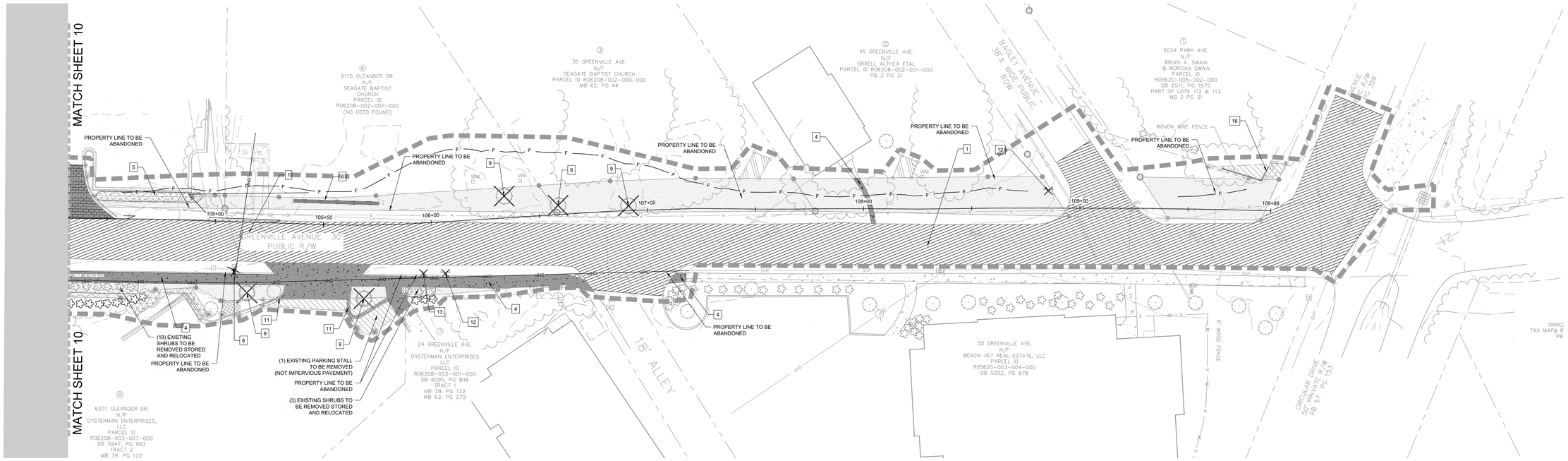

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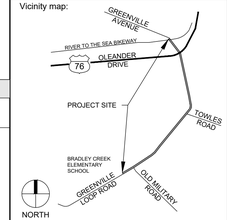

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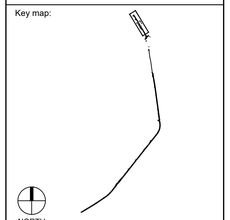

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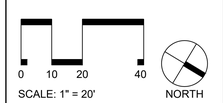

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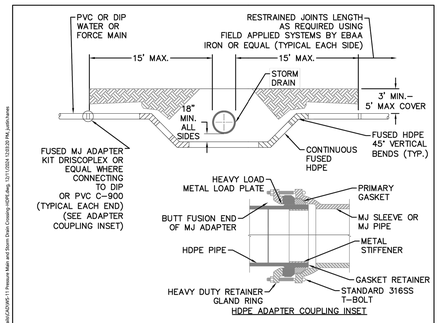
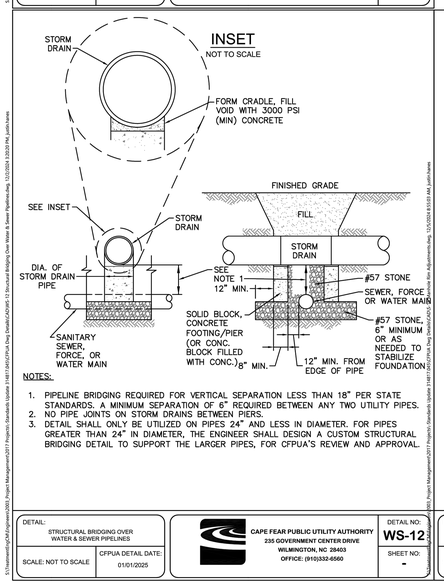


NOTES:
1. MAY BE USED AS AN ALTERNATIVE TO CFPUA STANDARD DETAIL WS–10 (STORM CROSSING) WITH APPROVAL BY CFPUA. SHALL NOT BE USED FOR DITCH CROSSINGS.
2. NO SERVICE CONNECTIONS, VALVES, TEES, ADDITIONAL FITTINGS OR APPURTENANCES SHALL BE INSTALLED ON HDPE.
3. 45° VERTICAL BENDS MAY BE ELIMINATED IF OFFSET CAN BE ACHIEVED BY DEFLECTING PIPE WITHIN MANUFACTURER'S MAXIMUM BENDING RADIUS.
4. HDPE SHALL BE MINIMUM OF DR–11 (200 PSI), DIPS, PE 4710, BLUE POTABLE WATER MAINS AND GREEN SEWER FORCE MAINS. INSTALLATIONS IN PUBLIC RIGHT–OF–WAY ARE SUBJECT TO NC DOT REQUIREMENTS, WHICH MAY INCLUDE USE OF DR–9 HDPE.
5. 45° VERTICAL BENDS MAY BE FUSED BY SUPPLIER PRIOR TO DELIVERY TO SITE.
6. THE HDPE CROSSING ASSEMBLY SHALL BE PRESSURE TESTED PRIOR TO ACTIVATING. ABOVE GROUND PRESSURE TEST MAY BE ALLOWED WITH APPROVAL BY CFPUA.

DETAIL:	CAPE FEAR PUBLIC UTILITY AUTHORITY	DETAIL NO:
PRESSURE MAIN AND STORM DRAIN CROSSING-HDPE	235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	WS-11
SCALE: NOT TO SCALE / CFPUA DETAIL DATE: 01/01/2025		SHEET NO: -

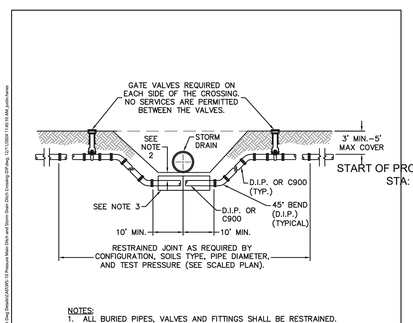


NOTES:
1. PIPELINE BRIDGING REQUIRED FOR VERTICAL SEPARATION LESS THAN 18" PER STATE STANDARDS. A MINIMUM SEPARATION OF 6" REQUIRED BETWEEN ANY TWO UTILITY PIPES.
2. NO PIPE JOINTS ON STORM DRAINS BETWEEN PIERS.
3. DETAIL SHALL ONLY BE UTILIZED ON PIPES 24" AND LESS IN DIAMETER. FOR PIPES GREATER THAN 24" IN DIAMETER, THE ENGINEER SHALL DESIGN A CUSTOM STRUCTURAL BRIDGING DETAIL TO SUPPORT THE LARGER PIPES, FOR CFPUA'S REVIEW AND APPROVAL.

DETAIL:	CAPE FEAR PUBLIC UTILITY AUTHORITY	DETAIL NO:
STRUCTURAL BRIDGING OVER WATER & SEWER PIPELINES	235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	WS-12
SCALE: NOT TO SCALE / CFPUA DETAIL DATE: 01/01/2025		SHEET NO: -

SECTION

DETAIL:	CAPE FEAR PUBLIC UTILITY AUTHORITY	DETAIL NO:
MANHOLE RIM ADJUSTMENTS	235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	S-15
SCALE: NOT TO SCALE / CFPUA DETAIL DATE: 01/01/2025		SHEET NO: -



NOTES:
1. ALL BURIED PIPES, VALVES AND FITTINGS SHALL BE RESTRAINED.
2. MINIMUM DEPTH OF COVER SHALL BE 30".
   a. IN DOT R/W, MINIMUM OF 36" DEPTH REQUIRED.
   b. IF 30" DEPTH OF COVER CANNOT BE ACHIEVED, THEN PRESSURE CLASS 350 DIP SHALL BE USED. PRIOR APPROVAL FROM CFPUA AND PWS REQUIRED.
   c. MINIMUM DEPTH OF COVER OF 24" WHEN INSTALLING DIP.
   d. REFER TO 15A NCAC 18C AND 15A NCAC 2T FOR REQUIREMENTS GOVERNING STORM DRAIN AND PRESSURE MAIN SEPARATIONS.
   e. REFER TO CFPUA DETAIL WS–12 FOR STRUCTURAL BRIDGING REQUIREMENTS WHEN CROSSING UNDERNEATH A STORM DRAIN.
3. FOR OPEN DITCH CROSSINGS, INSTALL CASING PIPE (PER WS–8) AT THE CROSSING. THE CASING WILL NEED TO EXTEND A MINIMUM OF 2' PAST THE OUTSIDE WALL OF THE STORM DRAIN.

DETAIL:	CAPE FEAR PUBLIC UTILITY AUTHORITY	DETAIL NO:
PRESSURE MAIN DITCH AND STORM DRAIN DITCH CROSSING-DIP	235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	WS-10
SCALE: NOT TO SCALE / CFPUA DETAIL DATE: 01/01/2025		SHEET NO: -

PROPOSED UTILITY SEPARATION:

1. SEPARATION OF SANITARY SEWERS AND STORM SEWERS:
   a. A 24" VERTICAL SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES OR BOTH THE SANITARY AND THE STORM LINES SHALL BE CONSTRUCTED OF FERROUS MATERIALS.

WATER NOTES:

1. IF SDR 9 (POLY) WATER SERVICES ARE TO BE RELOCATED/EXTENDED, THEY WILL NEED TO E REINSTALLED FROM THE WATER MAIN TO METER SETTER. IF THE WATER SERVICE IS COPPER, IT MAY BE COUPLED WITH COPPER FOR THE EXTENSION.
2. WATER METER BOXES MAY BE RAISED TO GRADE PROVIDED THE METER SETTERS REMAIN WITHIN THE METER BOX.
3. VALVE BOX PAVING RINGS ARE NOT PERMITTED. THE VALVE BOX WILL NEED TO BE ADJUSTED PER CFPUA REQUIREMENTS.

SEWER NOTES:

1. IF SEWER SERVICES ARE RELOCATED (LENGTHENED/SHORTENED) THEY WILL NEED TO BE CCTV INSPECTED. THE CCTV INSPECTION MAY BE PERFORMED AFTER 14 DAYS OR IMMEDIATELY PENDING CFPUA IS PROVIDED WITH PASSING COMPACTION TESTING RESULTS MEETING OR EXCEEDING 95% IN 2' LIFTS.
2. SEWER CLEAN OUT BOXES MAY BE RAISED TO GRADE PROVIDED THAT A 6" TO 11" AIR GAP IS MAINTAINED.
3. MANHOLE PAVING RISER RINGS INSTALLED INSIDE OF MANHOLE RINGS ARE NOT APPROVED. THE RING AND COVER MAY BE ADJUSTED USING CONCRETE RISER RINGS INSTALLED ON TOP OF MANHOLE CONE. MAXIMUM CHIMNEY HEIGHT TO BE 8". IF MORE THAN 8" OR ADJUSTMENT IS REQUIRED, THEN THE MANHOLE CONE WILL NEED TO BE REPLACED. SEE CFPUA DETAIL S-15.

UTILITY NOTES:

1. UNLESS OTHERWISE NOTED, ALL MANHOLES SHALL BE PRE-CAST CONCRETE STRUCTURES.
2. THE CONTRACTOR SHALL COORDINATE WITH OTHER CONTRACTORS ON SITE AND UTILITY PROVIDERS DURING CONSTRUCTION TO ENSURE SMOOTH TRANSITION BETWEEN DISCIPLINES.
3. THE CONTRACTOR SHALL COORDINATE ALL PEDESTRIAN AND VEHICULAR INTERRUPTIONS WITH OWNER'S REPRESENTATIVE AT LEAST 72 HOURS PRIOR TO BEGINNING WORK.
4. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK INSIDE THE PUBLIC RIGHT OF WAY PRIOR TO RECEIPT AND COMPLIANCE WITH ALL APPLICABLE NCDOT PERMITS. ADDITIONALLY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FLAGGERS AND TRAFFIC CONTROL DURING ALL WORK INSIDE THE PUBLIC RIGHTS OF WAY.
5. ALL EXISTING SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM LIDAR AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. DEPTHS OF EXISTING UTILITIES SHOWN IN PROFILE VIEWS ARE BASED ON STANDARD ASSUMPTIONS. THE CONTRACTOR SHALL FIELD VERIFY THE EXACT LOCATION, DEPTH, SIZE AND MATERIAL OF ANY AND ALL SUB-SURFACE CONDITIONS REFERENCED IN THESE PLANS PRIOR TO ANY EXCAVATION OR CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
6. ELEVATIONS OF UTILITIES ARE GIVEN TO THE EXTENT OF INFORMATION AVAILABLE. WHERE ELEVATIONS ARE NOT GIVEN AT POINTS OF EXISTING UTILITY CROSSINGS, SUCH ELEVATIONS SHALL BE DETERMINED BY THE CONTRACTOR AND REPORTED TO THE ENGINEER. WHEN UNKNOWN LINES ARE EXPOSED, THEIR LOCATIONS AND ELEVATIONS SHALL ALSO BE REPORTED TO THE ENGINEER.
7. UNDERGROUND UTILITIES SHOWN ON THIS PLAN SHALL BE INSTALLED PRIOR TO ANY CONSTRUCTION OF PARKING AREA, DRIVES, CURB AND GUTTER OR CONCRETE WALKS / PADS. IF UTILITIES SHOWN ON THIS PLAN CANNOT BE INSTALLED PRIOR TO INSTALLATION OF IMPERVIOUS (ASPHALT / CONCRETE) CONDUIT SHALL BE INSTALLED FOR THE "FUTURE" UTILITY INSTALLATION.
8. AS-BUILT DOCUMENTATION REQUIREMENTS: PRIOR TO APPROVAL FROM LOCAL JURISDICTION OR ENGINEER THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS (IN BOTH PAPER AND ELECTRONIC FORMAT (CAD / PDF) PREPARED AND SEALED BY A PROFESSIONAL LAND SURVEYOR SHOWING ALL UTILITY INSTALLATION. HORIZONTAL AND VERTICAL INFORMATION SHALL BE PROVIDED FOR WATER, SEWER, STORM INCLUDING ALL STRUCTURES, VALVES, HYDRANTS, AND OTHER APPURTENANCES.

ABBREVIATIONS

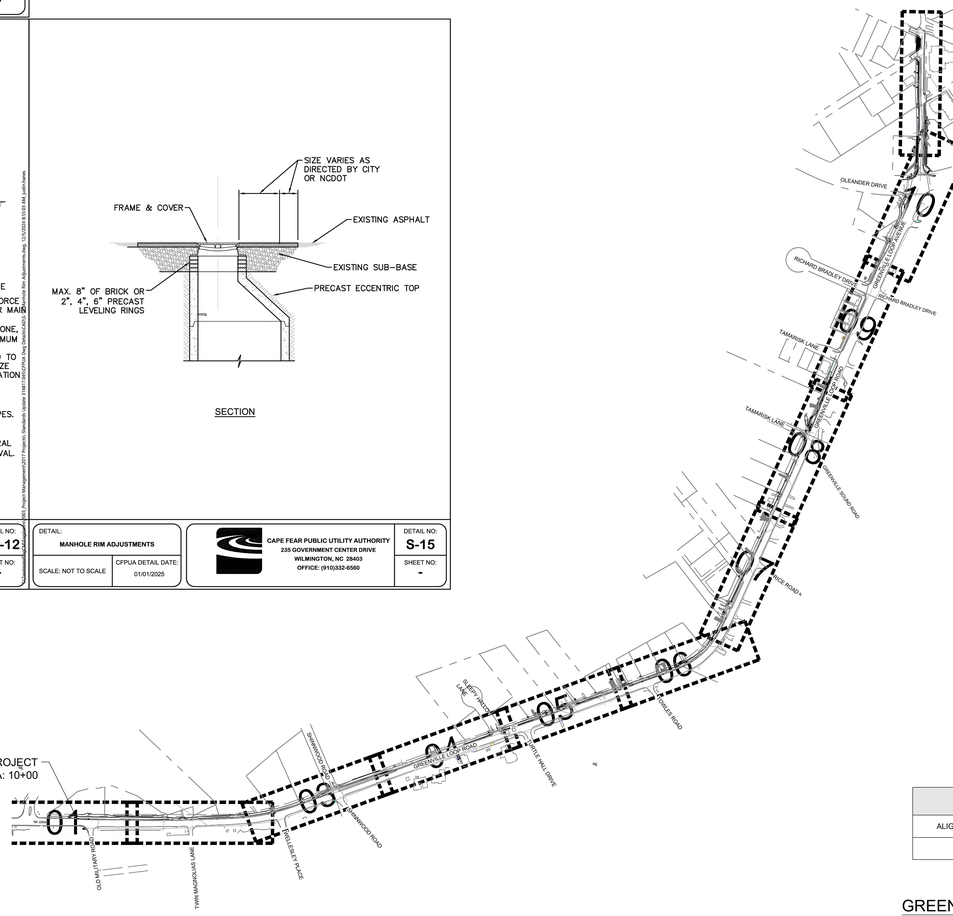
ABBREVIATION	NAME	DETAIL REFERENCE
JB	JUNCTION BOX	7/L9.20
CB	CATCH BASIN	1/L9.20
DI	DROP INLET	4/L9.20
AD	AREA DRAIN	6/L9.20
OF	OUTFALL	
FES	FLARED END SECTION	2/L9.21

NOTES:

1. REFER TO SHEET L9.22 FOR STORM DRAINAGE TABLES.
2. CONTRACTOR TO INSTALL CLASS IV RCP IN LOCATIONS WHERE STORM DRAINAGE PIPE HAS LESS THAN 2' COVER
3. CFPUA WATER SERVICES CANNOT BE SPLICED UNLESS THEY ARE COPPER. IF WATER SERVICES IS IN CONFLICT WITH A STORMDRAIN STRUCTURE AND MUST BE RELOCATED, NEW 1" WATER SERVICE MUST BE INSTALLED.
4. CFPUA WATER METER BOXES AND CLEANOUTS LOCATED WITHIN THE PROPOSED TRAIL SHALL BE ADJUSTED TO MATCH FINISHED GRADE ELEVATION. METERS MUST ALSO BE ADJUSTED TO REMAIN WITHIN THE METER BOX.
5. CONTRACTOR SHALL EVALUATE EVERY UTILITY CROSSING TO DETERMINE WHETHER STRUCTURAL BRIDGING IS REQUIRED. PER STATE STANDARDS STRUCTURAL BRIDGING IS REQUIRED IS THE VERTICAL SEPARATION IS LESS THEN 18", WITH A MINIMUM SEPARATION OF 6" REQUIRED BETWEEN ANY TWO UTILITY PIPES.
6. CONTRACTOR SHALL NOTIFY CFPUA OF ANY CONFLICTS BETWEEN THE PROPOSED STORM DRAINAGE AND EXISTING WATERLINE, WHERE THE EXISTING WATERLINE NEEDS TO BE LOWERED TO ALLOW THE STORM DRAINAGE TO BE INSTALLED. WATERLINE TO BE ADJUSTED PER CFPUA DETAIL WS-11 - PRESSURE MAIN AND STORM DRAIN CROSSING ON SHEET L3.00

SITE LEGEND

SYMBOL	DESCRIPTION	DETAIL REFERENCE
	PROPOSED CONCRETE SIDEWALK	7/L9.00
	ASPHALT PAVEMENT & TRAIL	1 & 2/L9.00
	PROPOSED 2' CURB & GUTTER	3/L9.00
	PROPOSED STOP BAR	1.5/L9.01
	PROPOSED CROSSWALK	1-2.5/L9.01
	RELOCATED SIGN	N/A
	PROPOSED TREELINE	N/A
	RELOCATED LIGHT	N/A
	RELOCATED MAILBOX	N/A
	RELOCATED TELECOM PEDESTAL	N/A
	EASEMENT	N/A
	LIMITS OF DISTURBANCE	N/A
F	FILL	N/A
C	CUT	N/A

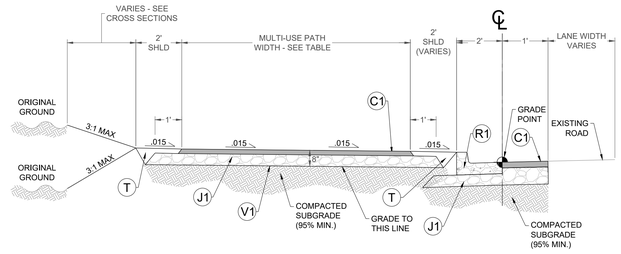


PAVEMENT SCHEDULE

A1	PROPOSED 4" CONCRETE PAVEMENT WITH WELDED WIRE MESH	R1	2' CONCRETE CURB AND GUTTER
C1	PROPOSED 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ.YD.	NOTES: 1. TRANSITION SUPERELEVATION AS SHOWN ON PLANS. TRANSITION DISTANCE SHALL BE 7' PER 1% CHANGE.	
J1	PROPOSED 6" AGGREGATE BASE COURSE	2. MAINTAIN 8' VERTICAL CLEARANCE ABOVE TRAIL IF POSSIBLE, 7' ABSOLUTE MINIMUM CLEARANCE.	
V1	TYPE IV WOVEN GEOTEXTILE SEPARATOR		
T	EARTH MATERIAL		

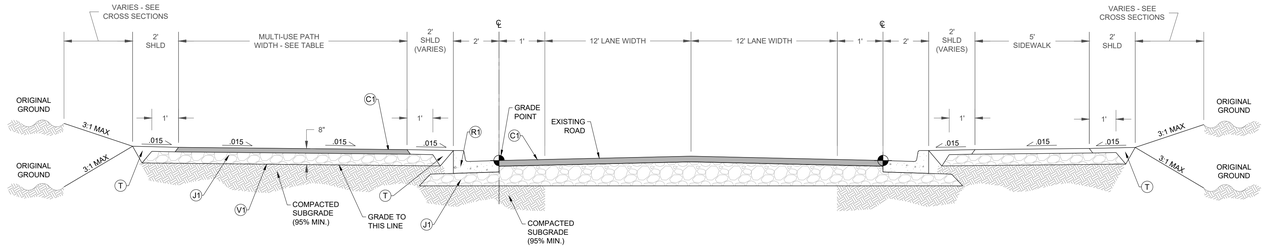
GREENVILLE LOOP ROAD TRAIL ALIGNMENT		
ALIGNMENT	BEGIN STATION	END STATION
-L-	1	57

GREENVILLE LOOP ROAD MULTI-USE TRAIL TYPICAL CROSS SECTION
NTS



GREENVILLE AVENUE TRAIL ALIGNMENT		
ALIGNMENT	BEGIN STATION	END STATION
-L-	58	79

GREENVILLE AVENUE TYPICAL CROSS SECTION
NTS



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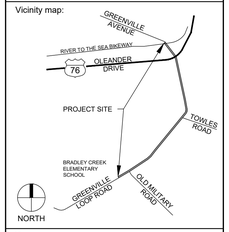
Vicinity map:



Key map:

Seal:

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SCALE: 1" = 300'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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Title:

OVERALL SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.00

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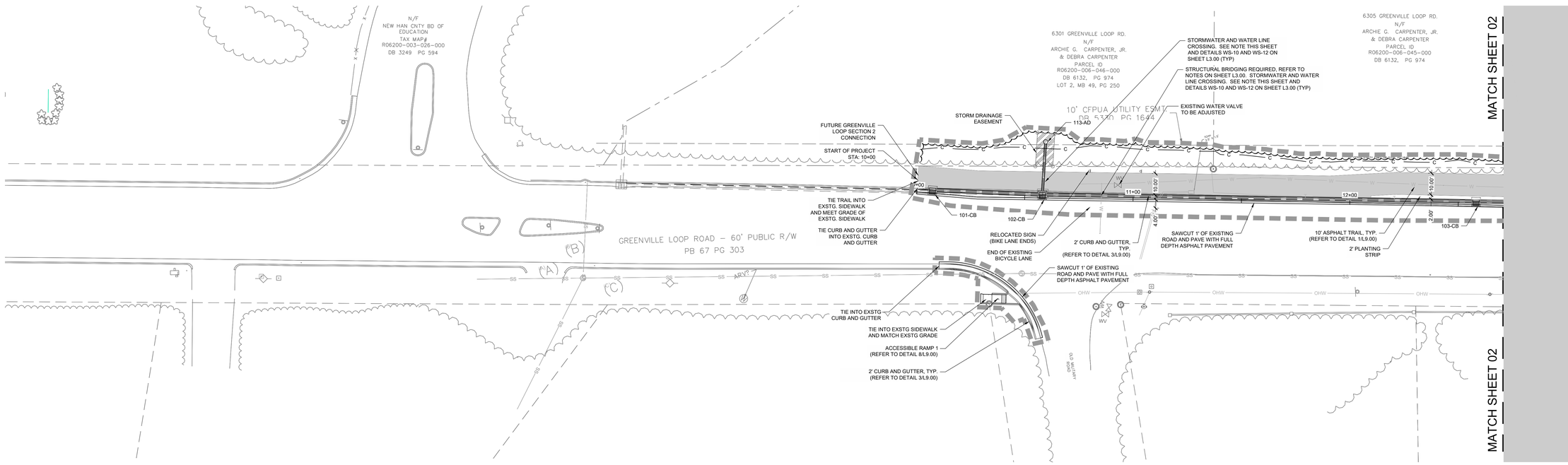

NOTES:

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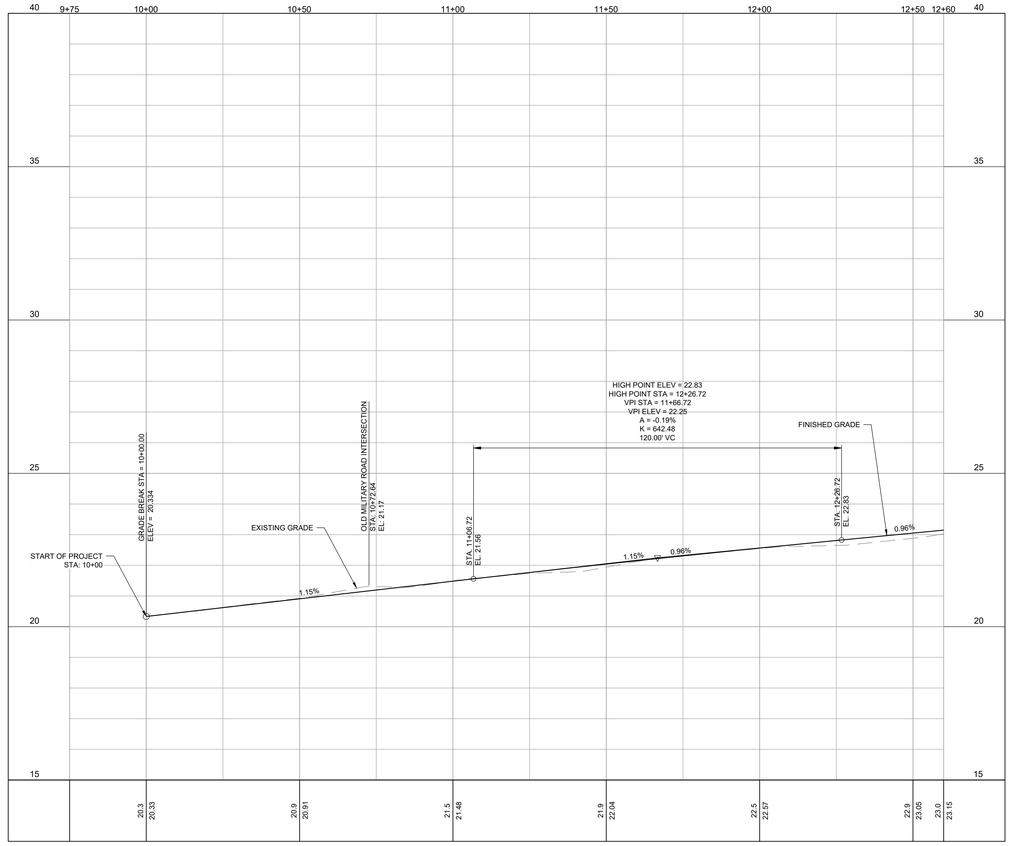

"L" PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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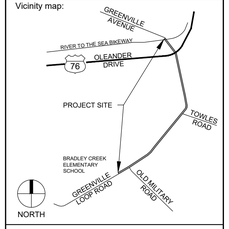
Vicinity map:



Key map:

NORTH

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN
10.09.2023

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.01

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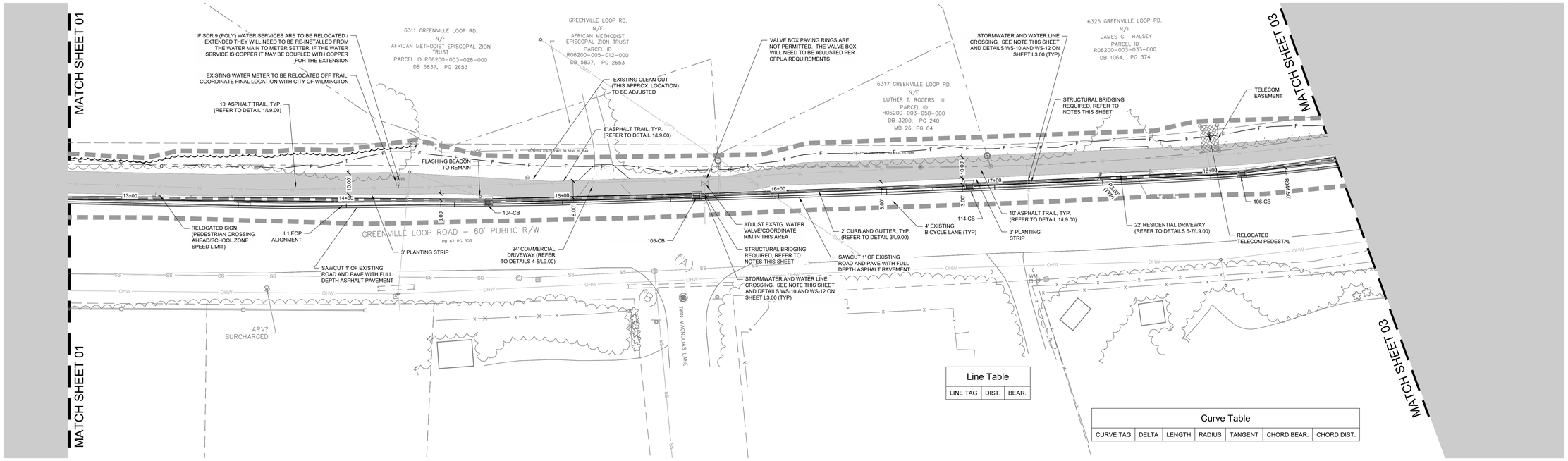

Line Table

LINE TAG	DIST.	BEAR.

Curve Table

CURVE TAG	DELTA	LENGTH	RADIUS	TANGENT	CHORD BEAR.	CHORD DIST.

NOTES:

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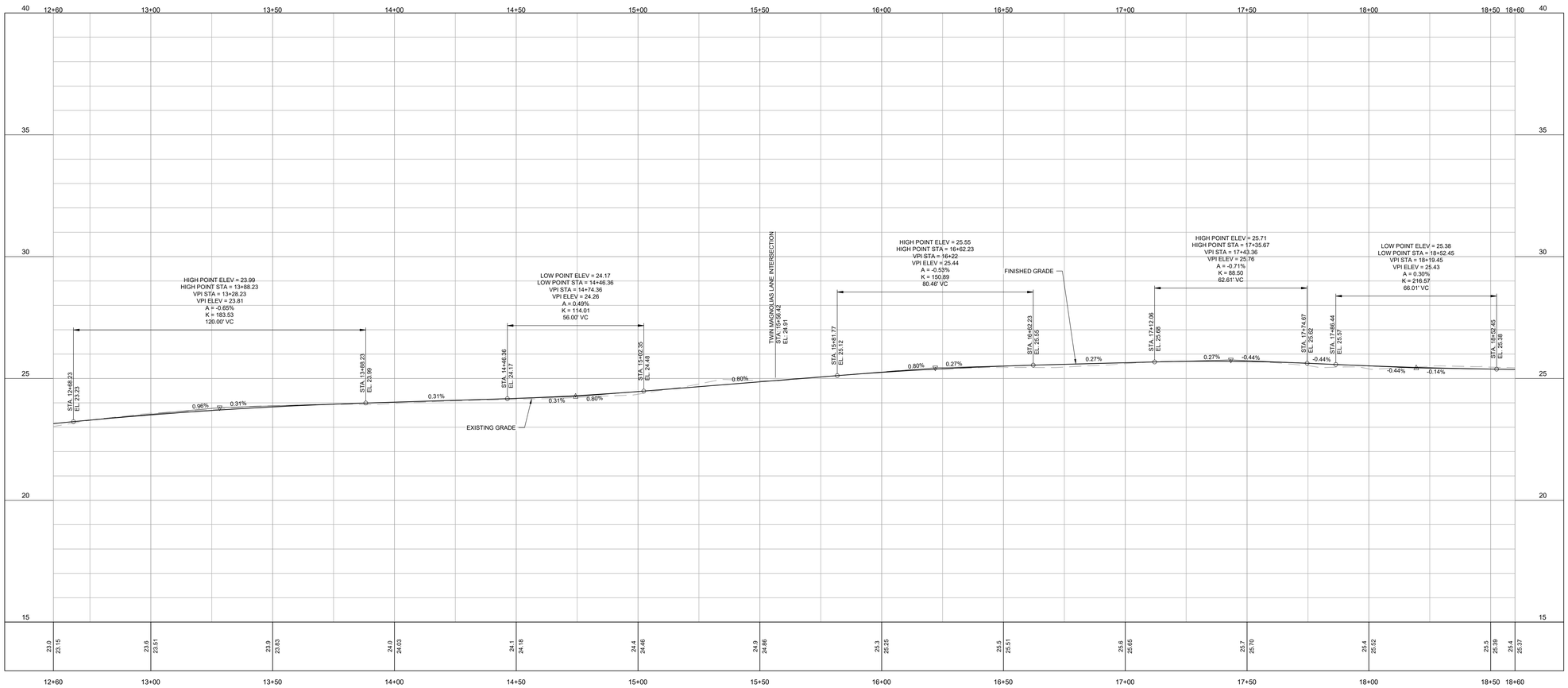

"L" PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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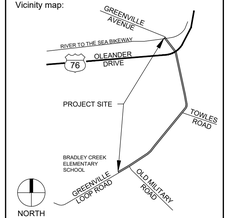
Vicinity map:



Key map:

NORTH

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN
10.09.2023

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.02

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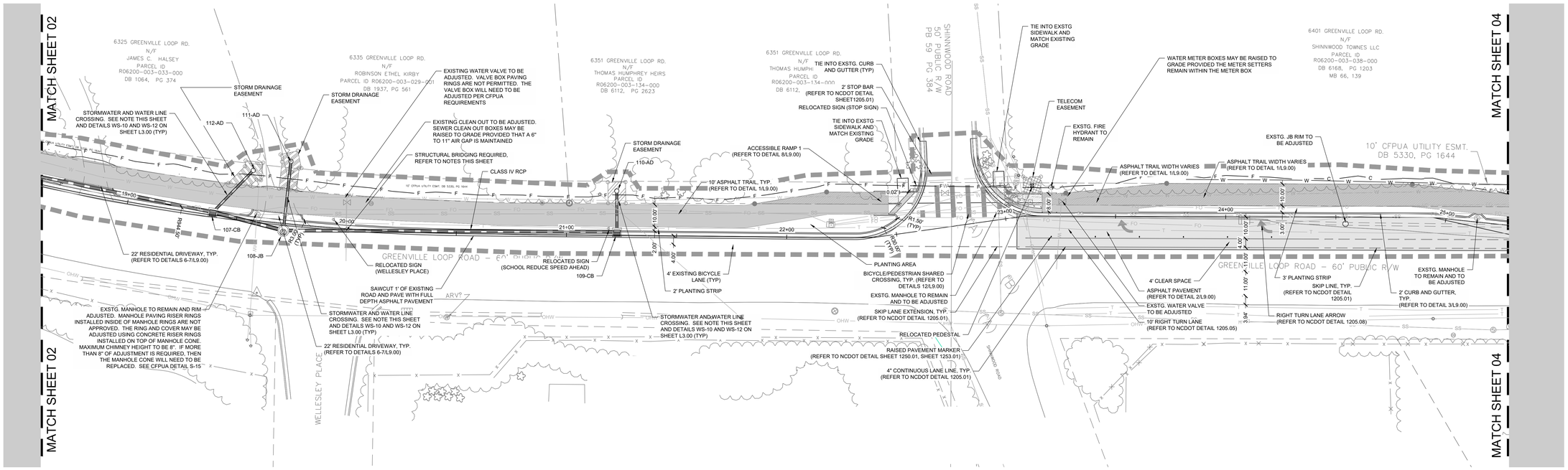

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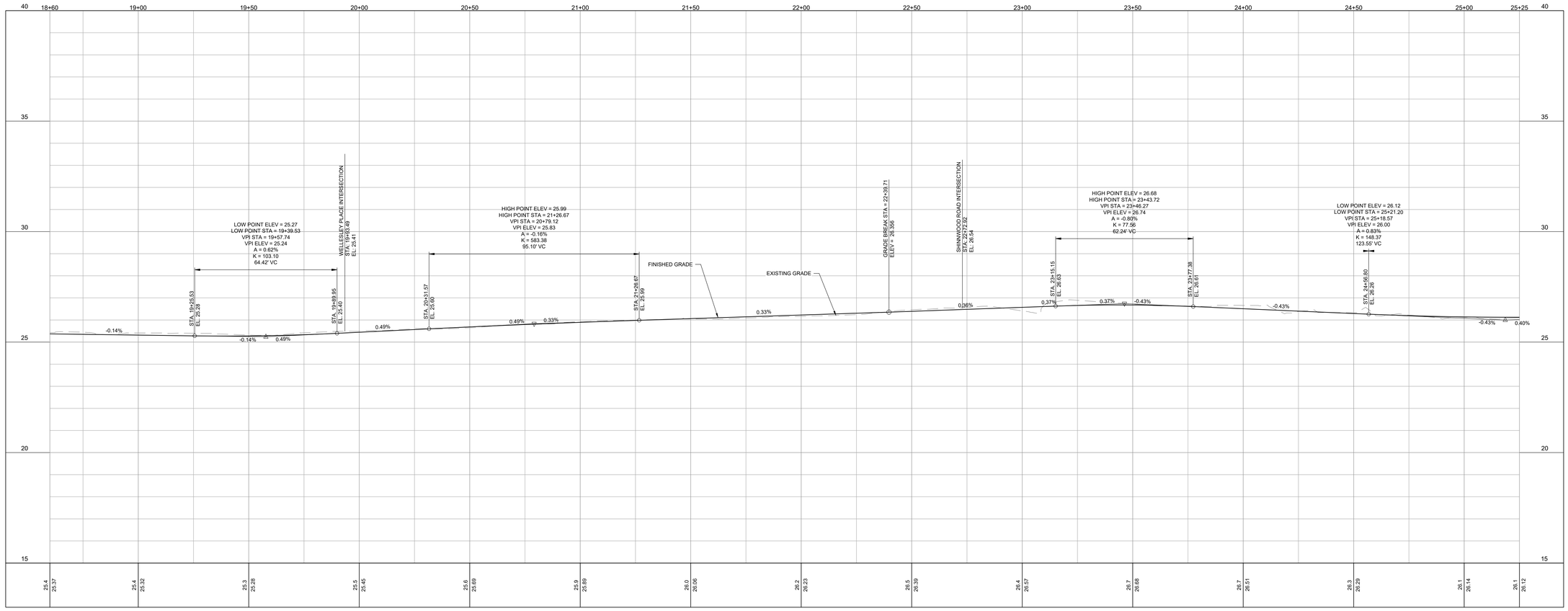

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NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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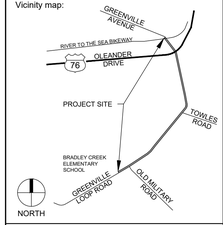

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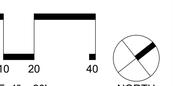

Project:

GREENVILLE LOOP TRAIL SECTION 3

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No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.03

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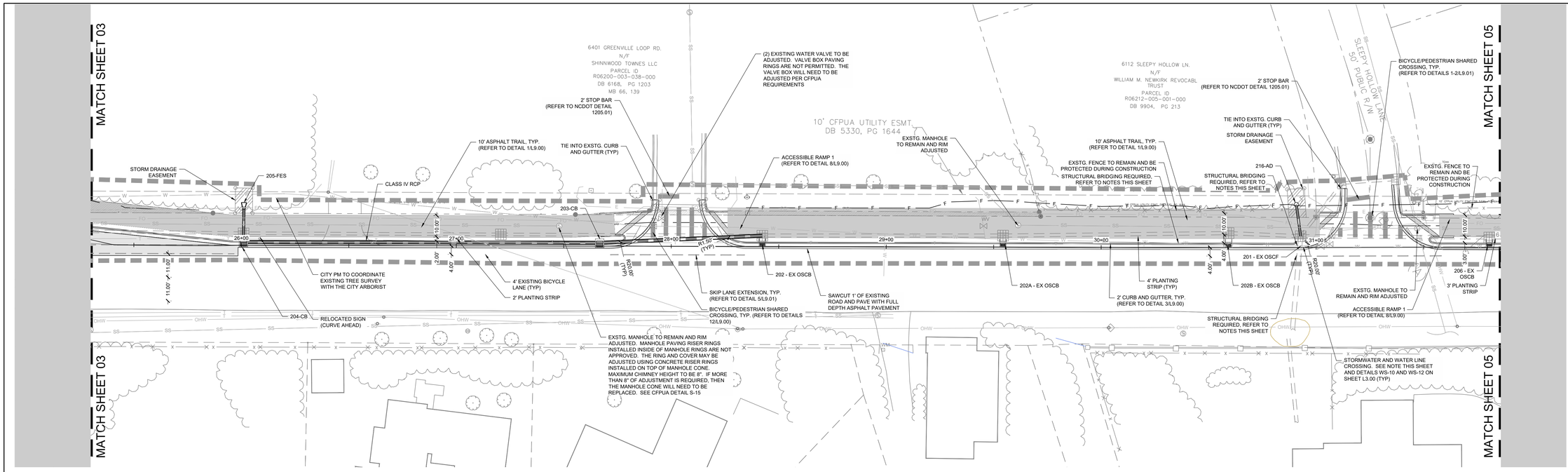

NOTES:

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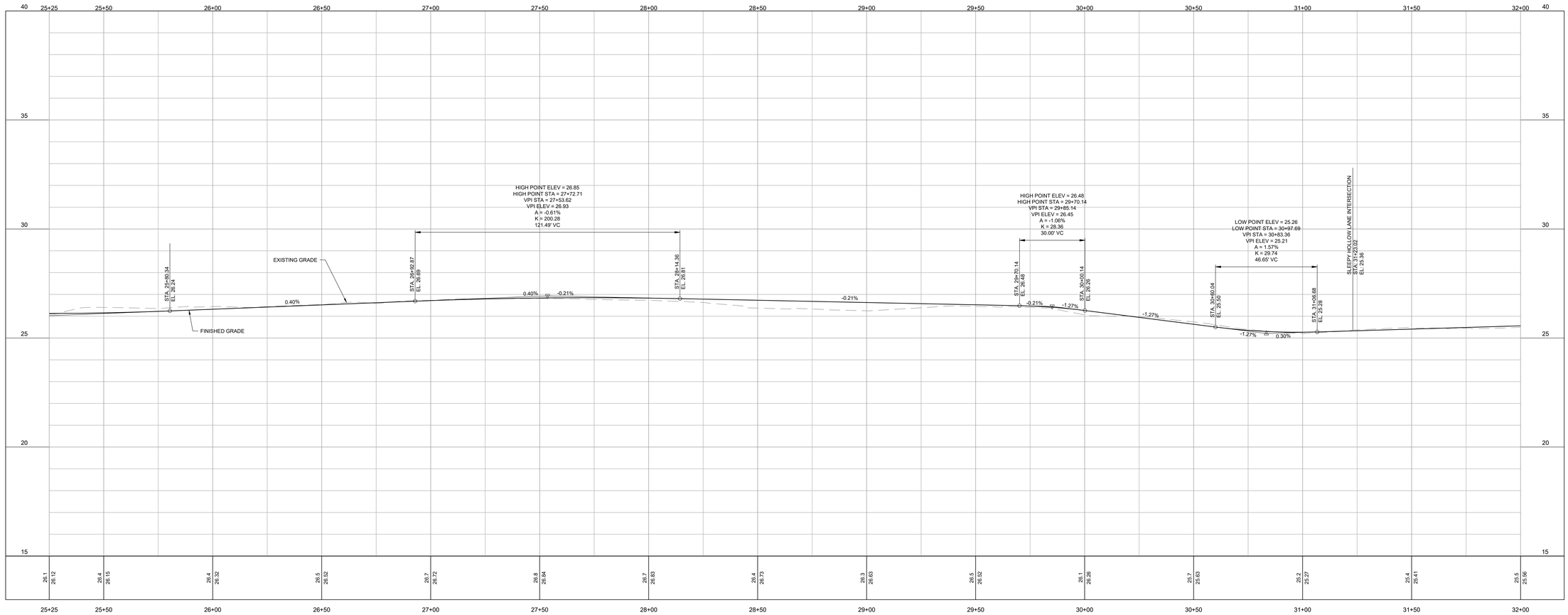

"L" PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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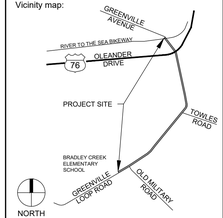
Vicinity map:



Key map:

NORTH

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN
10.09.2023

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
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Sheet #: L3.04

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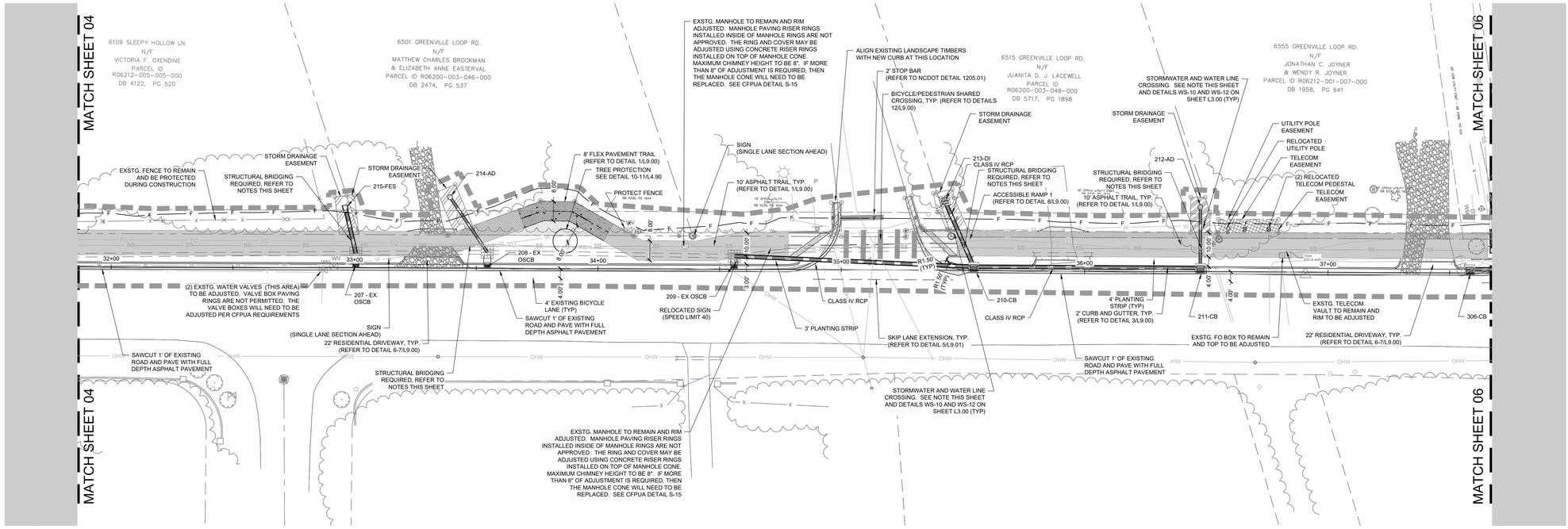

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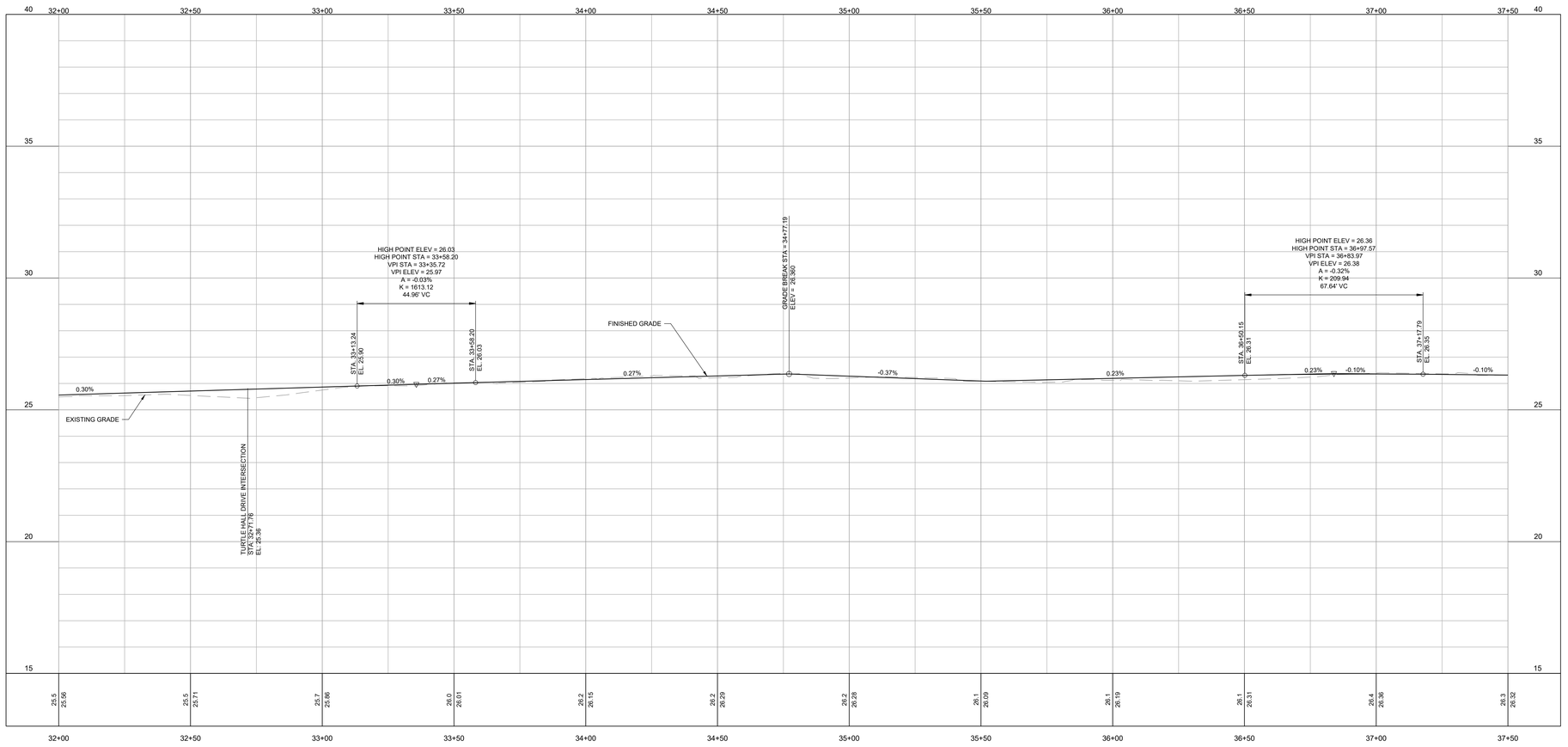

"L" PROFILE
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NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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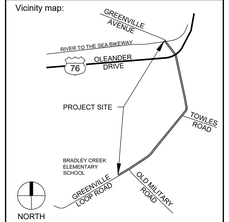
Vicinity map:



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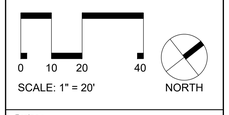

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.05

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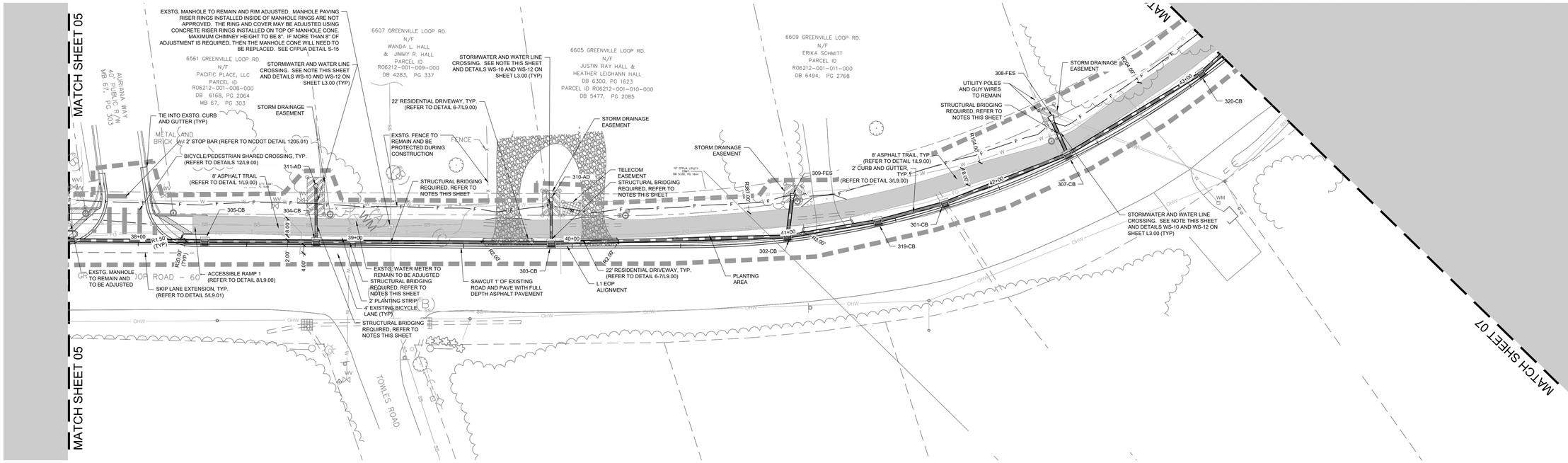

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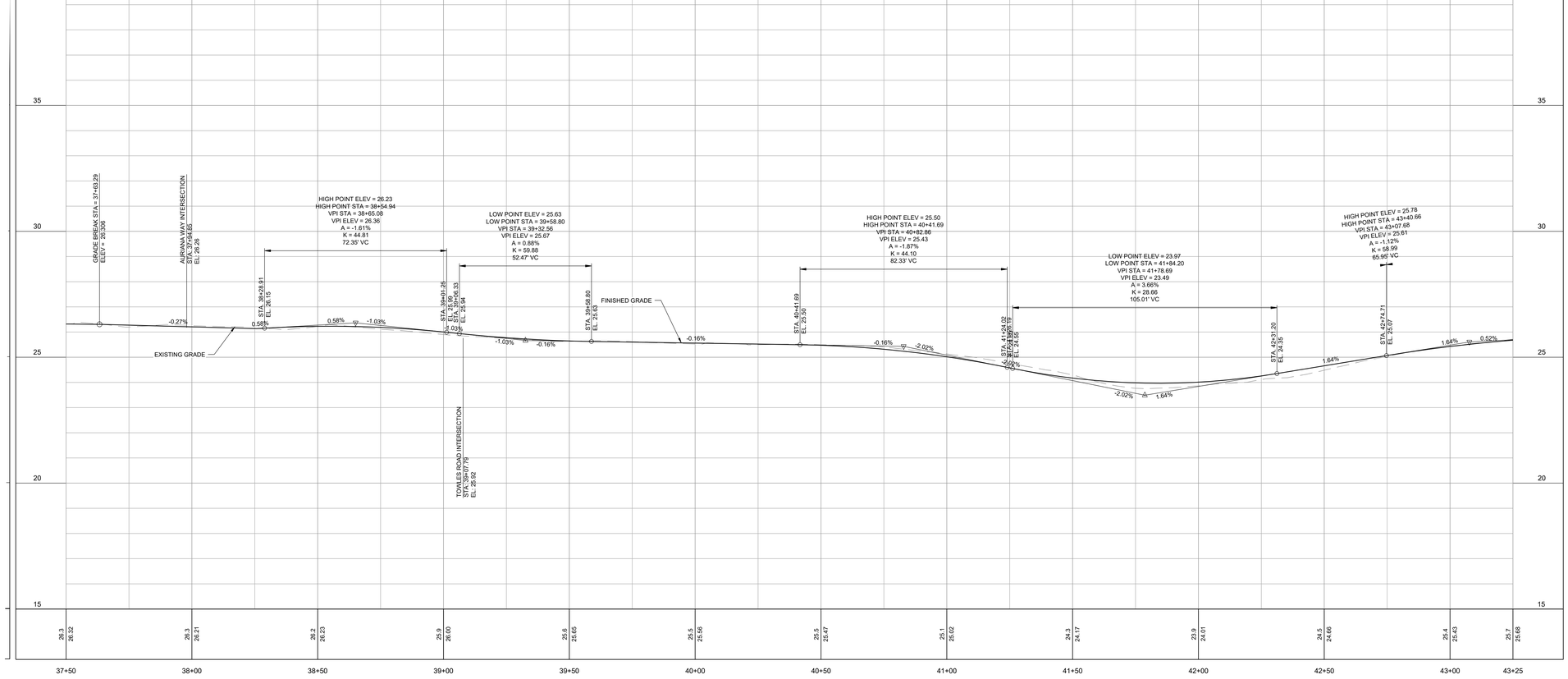

"L" PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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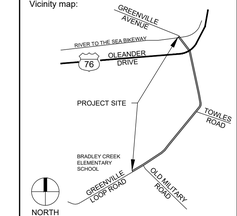
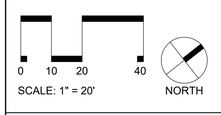
Vicinity map:



Key map:

NORTH

Seal:



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GREENVILLE LOOP TRAIL SECTION 3

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No.	Date	Description
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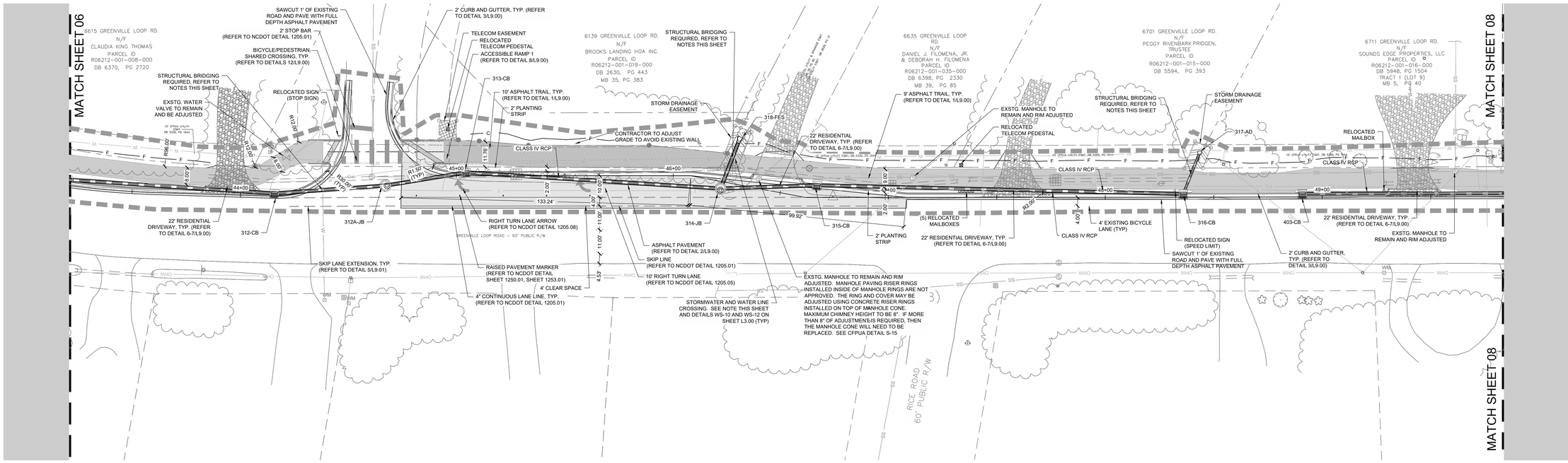
Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.06

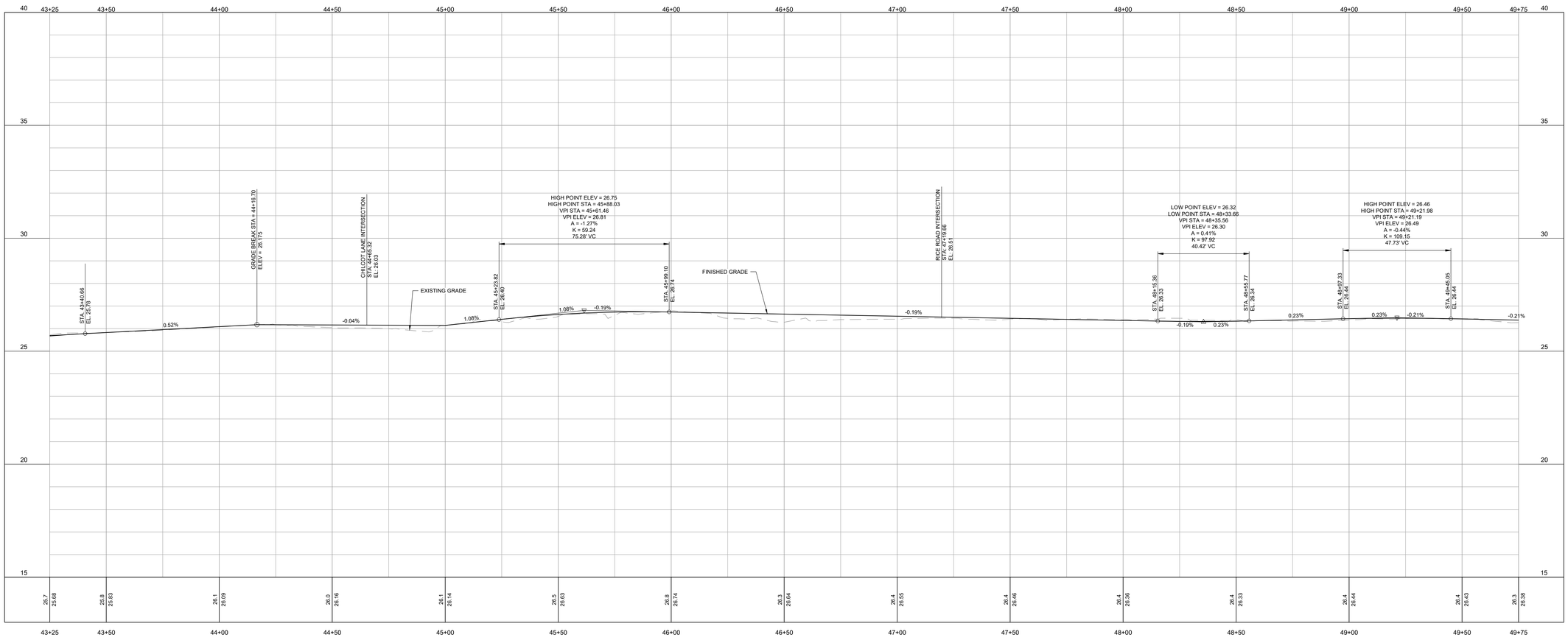
\\stewart-eng.local\stewart\PD\Projects\2021\21014 - greenville loop trail section 3\DWG\S3-CD\3-Sheets\L21014-L3.06 Site Plan.dwg Apr 09, 2025 - 3:04pm



NOTES:

1. REFER TO NOTES ON SHEET L3.00.

CONTRACTOR SHALL EVALUATE EVERY UTILITY CROSSING TO DETERMINE WHETHER STRUCTURAL BRIDGING IF REQUIRED. PER STATE STANDARDS, STRUCTURAL BRIDGING IS REQUIRED IF THE VERTICAL SEPARATION IS LESS THAN 18", WITH A MINIMUM SEPARATION OF 6" REQUIRED BETWEEN ANY TWO UTILITY PIPES.



"L" PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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101 N. TRYON ST., #1400
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FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21014

Client:

CITY OF WILMINGTON
NORTH CAROLINA

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ENGINEERING DIVISION
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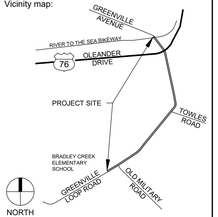
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



Key map:

NORTH

Seal:

NORTH CAROLINA
REGISTERED PROFESSIONAL ENGINEER
L-2401
EDDA A. DUNCAN
10.09.2023

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.07

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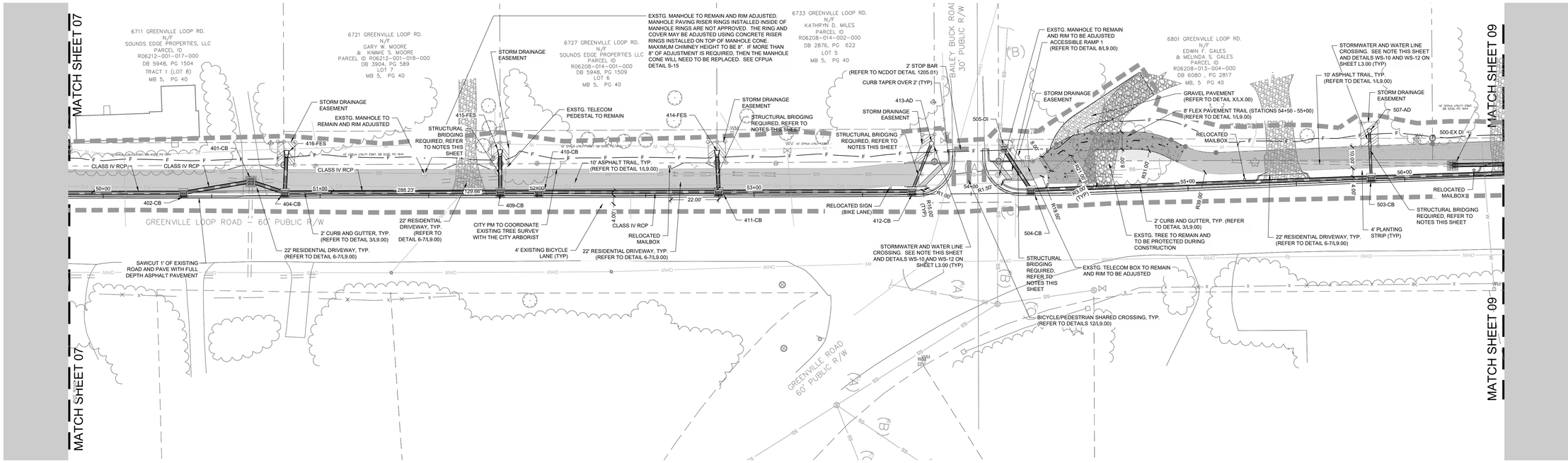

NOTES:

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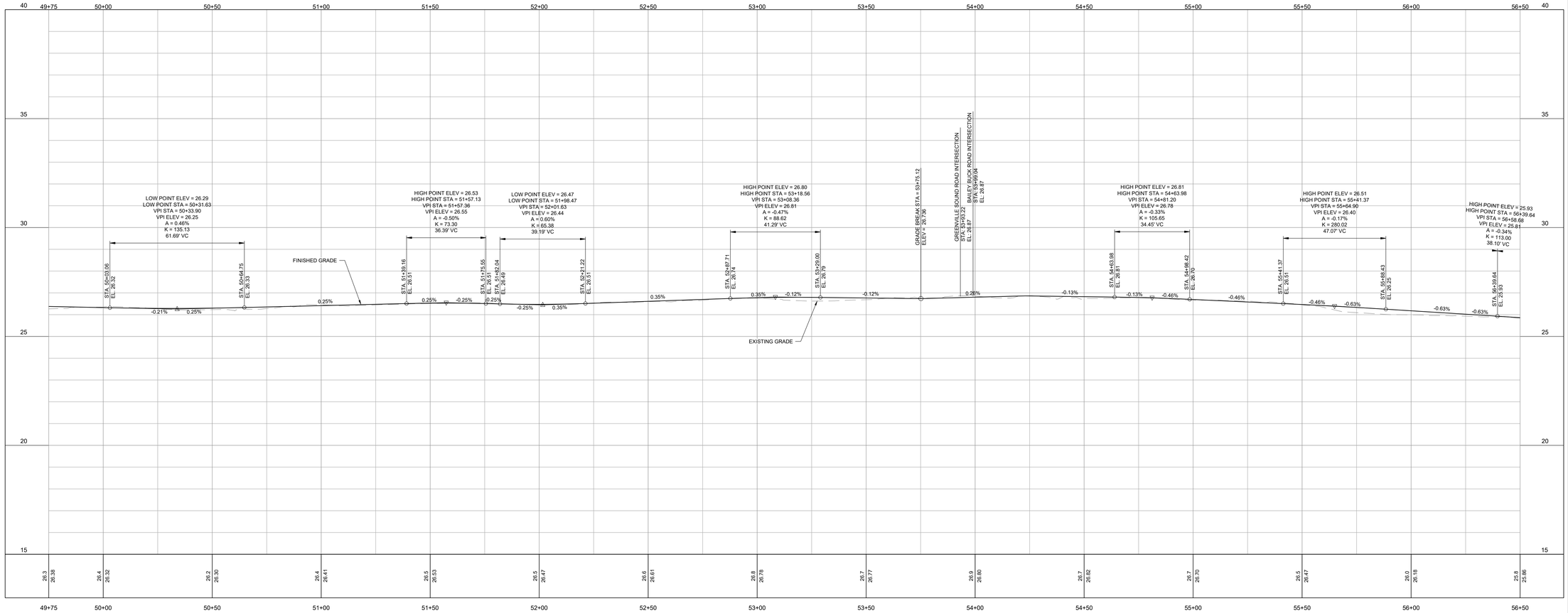

"L" PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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Client:
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NORTH CAROLINA
CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
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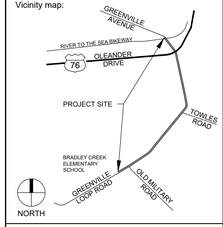
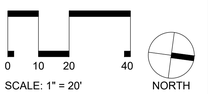
Vicinity map:



Key map:

NORTH

Seal:



Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.08

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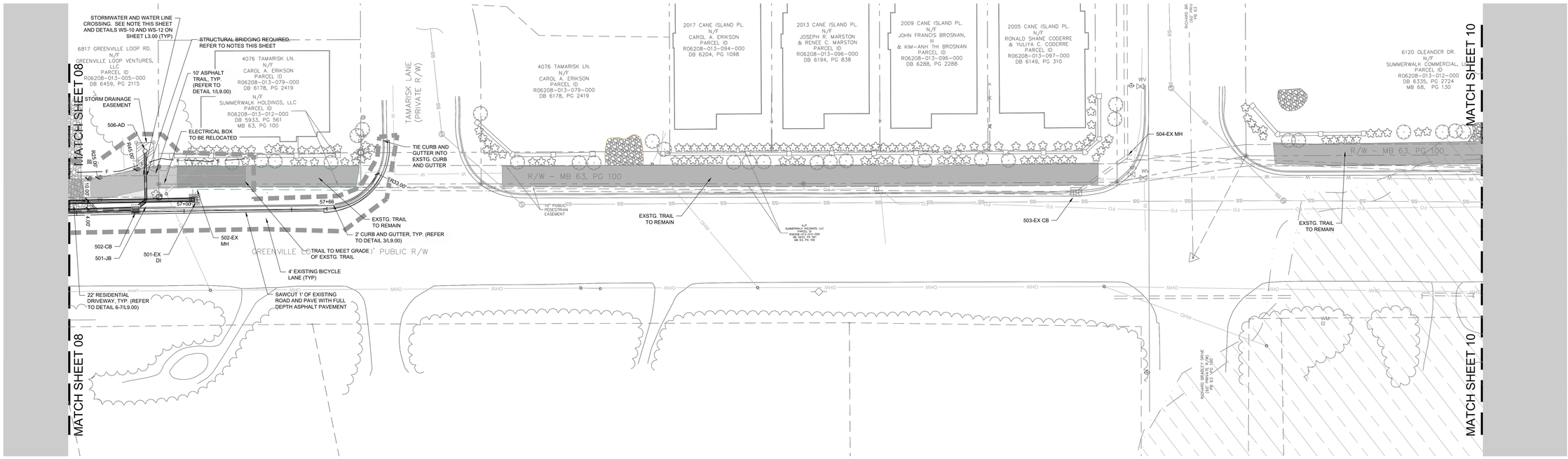

NOTES:
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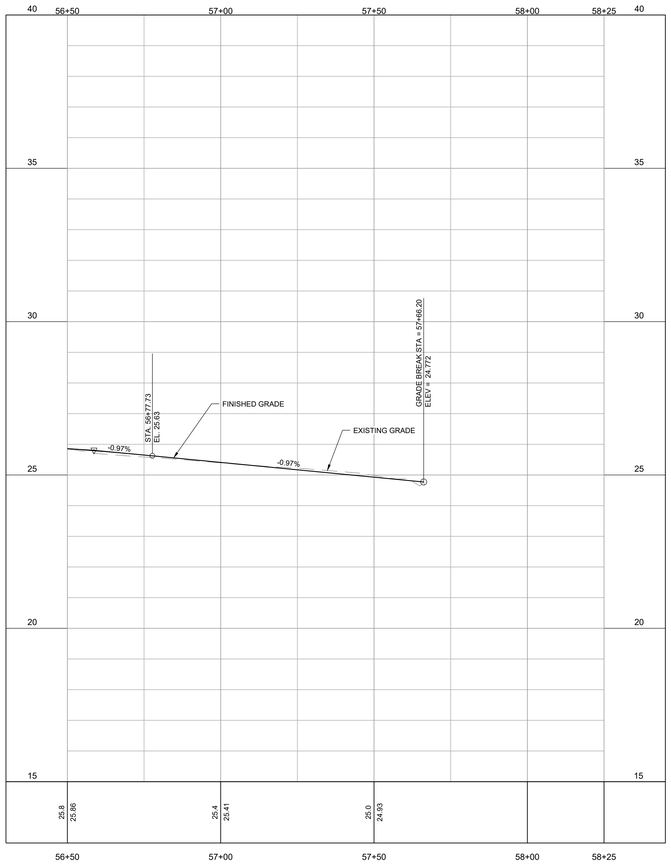

"L" PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.

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101 N. TRYON ST., #1400
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FIRM LICENSE #: C-1051
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PROJECT #: L21014

Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
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T 910.341.7807
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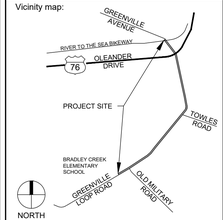
Vicinity map:



Key map:

NORTH

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN
10.09.2023

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.09

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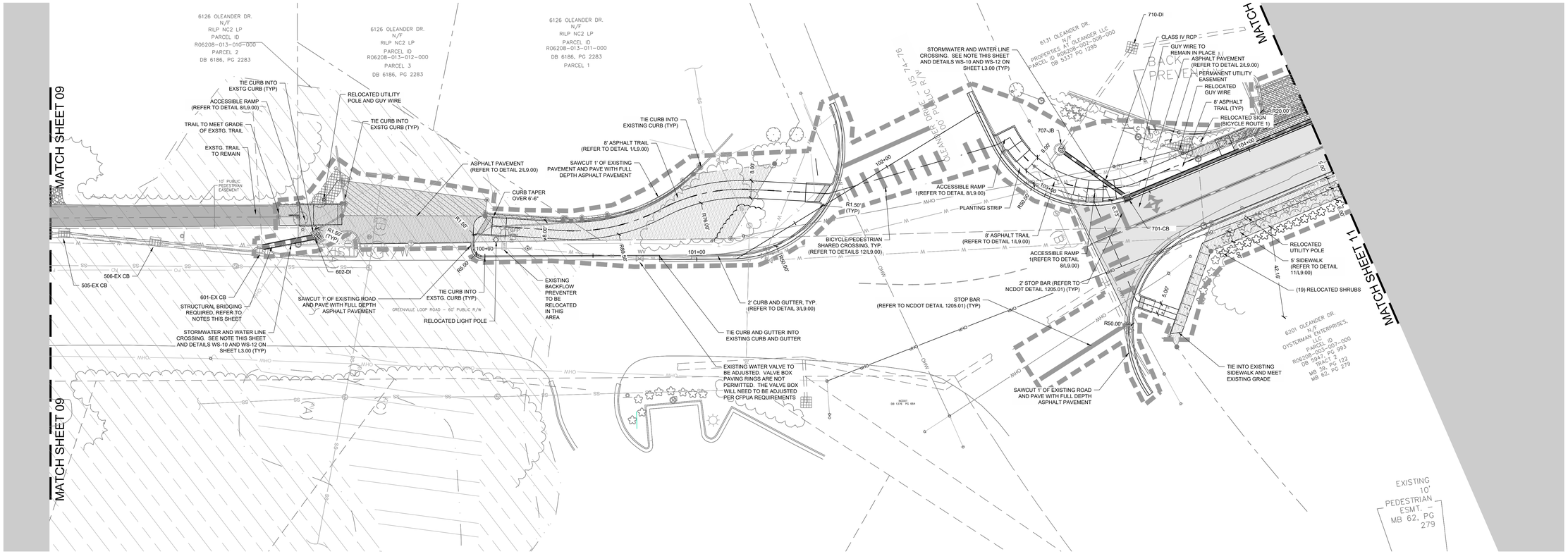
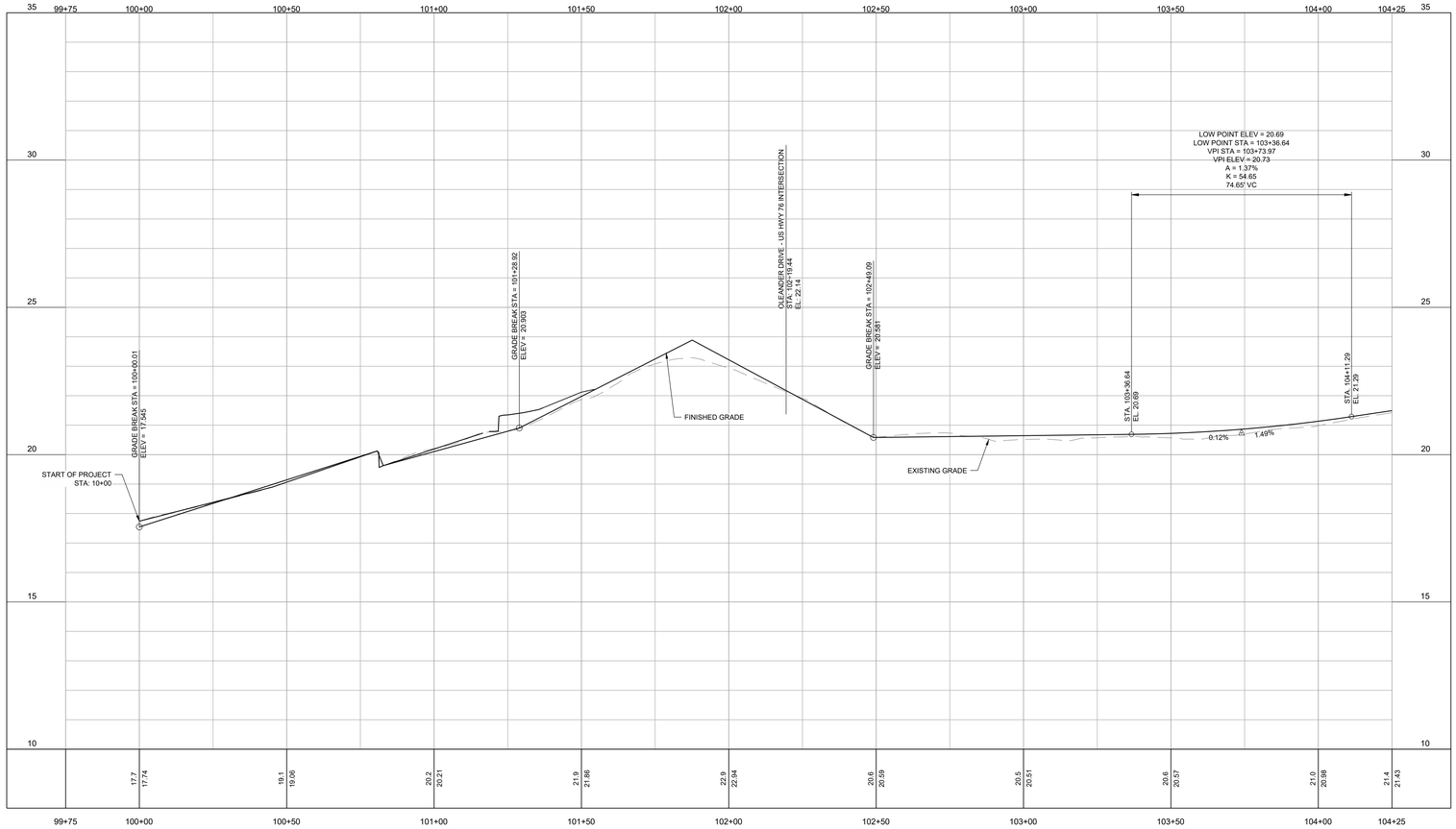


NOTES:

1. REFER TO NOTES ON SHEET L3.00.



L2 PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.
PROFILE SHOWN FOR GRAPHICAL PURPOSES ONLY. SEE CROSS SECTIONS.

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101 N. TRYON ST., #1400
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www.stewartinc.com
PROJECT #: L21014

Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
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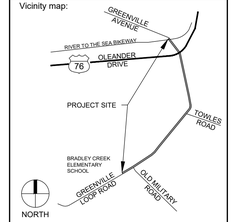
F 910.341.5881

Vicinity map:



Key map:

NORTH

Seal:

NORTH CAROLINA PROFESSIONAL LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN
10.09.2023

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 05.26.2022
Drawn by: TM
Approved by: TD
Sheet #: L3.10

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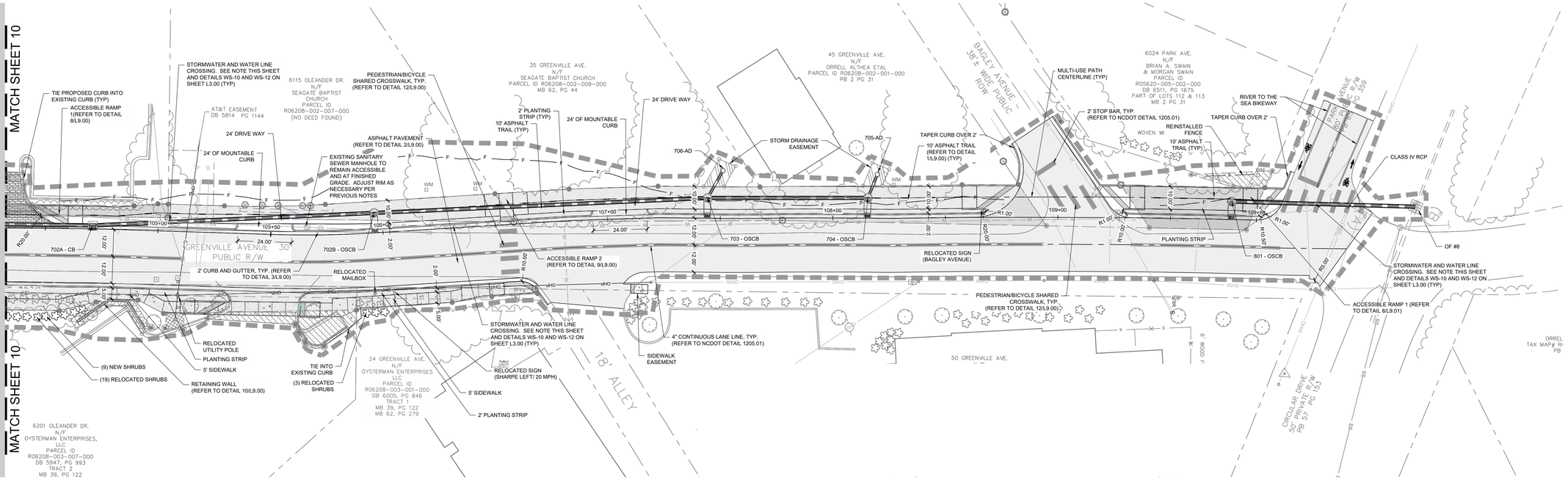

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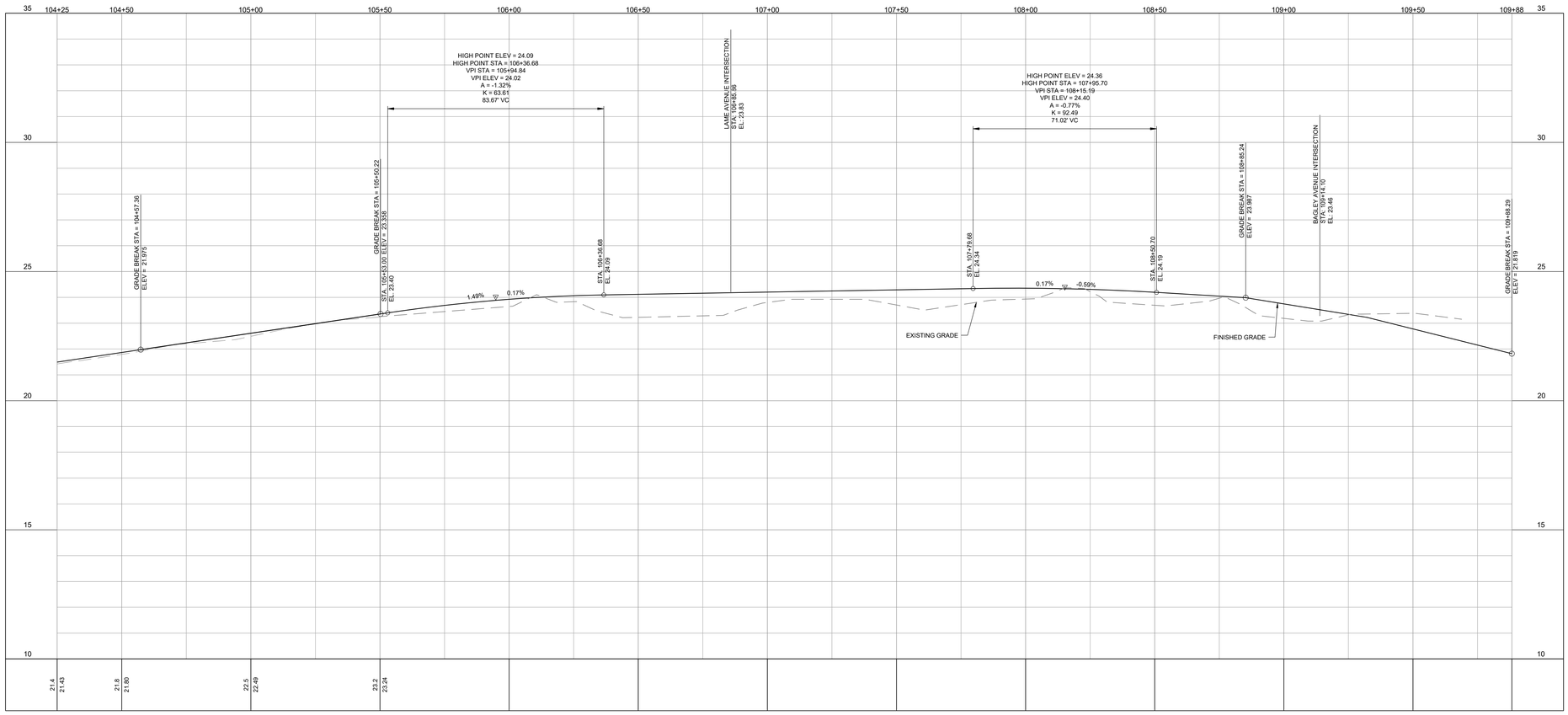

L2 PROFILE
SCALE: HOR : 1" = 20', VERT: 1" = 2'

NOTE: SEE CROSS SECTIONS FOR CONSTRUCTION LIMIT INFORMATION.
PROFILE SHOWN FOR GRAPHICAL PURPOSES ONLY. SEE CROSS SECTIONS.

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www.stewartinc.com
PROJECT #: L21014

Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
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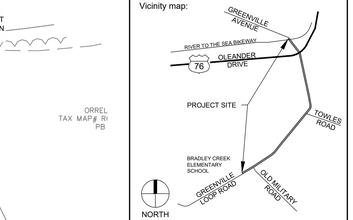
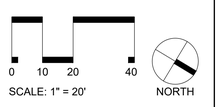
Vicinity map:



Key map:

Seal:



Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

ENLARGED SECTION 3 SITE PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L3.11

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ADMIXTURES:

AGRICULTURAL LIMESTONE: 2 TONS/ACRE

FERTILIZER: 1,000 LBS/ACRE - 10-10-10

SUPERPHOSPHATE: 500 LBS/ACRE - 20% ANALYSIS

MULCH: 2 TONS/ACRE - SMALL GRAIN STRAW

ANCHOR: ASPHALT EMULSION AT 300 GALS/ACRE

SEEDING PREPARATION:

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL 3 INCHES DEEP OVER ADVERSE SOIL CONDITIONED, IF AVAILABLE.
2. RIP THE ENTIRE AREA TO 6 INCHES DEPTH.
3. REMOVE ALL LOOSE ROCK, ROOTS, AND OTHER OBSTRUCTIONS LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY ALL AGRICULTURAL LIME, FERTILIZER, AND SUPERPHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE BELOW).
5. CONTINUE TILLAGE UNTIL A WELL PULVERIZED, FIRM, REASONABLY UNIFORM 4 TO 6 INCHES DEEP SEEDBED IS PREPARED.
6. SEED ON A FRESHLY PREPARED SEED BED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESENDING WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 60% DAMAGED , REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RESENDING WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE OVER 50% DAMAGED , REESTABLISH FOLLOWING ORIGINAL LIME, FERTILIZER AND SEEDING RATES AND LANDSCAPING PLANS.
10. SEE LANDSCAPING PLANS FOR PERMANENT SEEDING, MULCHING, AND FERTILIZING RATES. ALL AREAS NOT DESIGNATED TO RECEIVE PLANTS SHALL BE SEEDED PER THE LANDSCAPING PLANS.

TEMPORARY SEEDING PREPARATION:

1. CHISEL COMPACTED AREAS AND SPREAD TOPSOIL THREE INCHES DEEP OVER ADVERSE SOIL CONDITIONS, IF AVAILABLE.
2. RIP THE ENTIRE AREA TO SIX INCHES DEEP.
3. REMOVE ALL LOOSE ROCK, ROOTS AND OTHER OBSTRUCTIONS, LEAVING SURFACE REASONABLY SMOOTH AND UNIFORM.
4. APPLY AGRICULTURAL LIME, FERTILIZER AND SUPER PHOSPHATE UNIFORMLY AND MIX WITH SOIL (SEE ADMIXTURE BELOW).
5. CONTINUE TILLAGE UNTIL A WELL-PULVERIZED, FIRM, REASONABLY UNIFORM SEEDBED IS PREPARED FOUR TO SIX INCHES DEEP.
6. SEED ON A FRESHLY PREPARED SEEDBED AND COVER SEED LIGHTLY WITH SEEDING EQUIPMENT OR CULTIPACK AFTER SEEDING.
7. MULCH IMMEDIATELY AFTER SEEDING AND ANCHOR MULCH.
8. INSPECT ALL SEEDED AREAS AND MAKE NECESSARY REPAIRS OR RE-SEEDINGS WITHIN THE PLANTING SEASON, IF POSSIBLE. IF STAND SHOULD BE MORE THAN 60% DAMAGED, RE-ESTABLISH FOLLOWING THE ORIGINAL LIME, FERTILIZER AND SEEDING RATES.
9. CONSULT S&EC ENVIRONMENTAL ENGINEERS ON MAINTENANCE TREATMENT AND FERTILIZATION AFTER PERMANENT COVER IS ESTABLISHED.

SEEDING SCHEDULE

SHOULDERS, SIDE DITCHES, SLOPES (MAX 3:1)

DATE	TYPE	PLANTING RATE
AUG 15 - NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1 - MAR 1	TALL FESCUE & ABRUZZI RYE	300 LBS/ACRE 25 LBS/ACRE
MAR 1 - APR 15	TALL FESCUE	300 LBS/ACRE
APR 15 - JUN 30	HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUL 1 - AUG 15	TALL FESCUE	120 LBS/ACRE
	***BROWNTOP MILLET	35 LBS/ACRE
	***OR SORGHUM-SUDAN HYBRIDS	30 LBS/ACRE

SLOPES (3:1 TO 2:1)

DATE	TYPE	PLANTING RATE
MAR 1 - JUN 1	***BROWNTOP MILLET	50 LBS/ACRE
(MAR 1 - APR 15)	ADD TALL FESCUE OR ADD HULLED COMMON BERMUDAGRASS	120 LBS/ACRE (MAR 1 - JUN 30) 25 LBS/ACRE
JUN 1 - SEP 1	***TALL FESCUE AND ***BROWNTOP MILLET ***OR SORGHUM-SUDAN HYBRIDS	120 LBS/ACRE 35 LBS/ACRE 30 LBS/ACRE
SEP 1 - MAR 1	ANNUAL RYE AND TALL FESCUE ADD ABRUZZI RYE	70 LBS/ACRE 120 LBS/ACRE (NOV 1 - MAR 1) 25 LBS/ACRE

CONSULT CONSERVATION ENGINEER OR SOIL CONSERVATION SERVICE FOR ADDITIONAL INFORMATION CONCERNING OTHER ALTERNATIVES FOR VEGETATION OF DENUDED AREAS. THE ABOVE VEGETATION RATES ARE THOSE WHICH DO WELL UNDER LOCAL CONDITIONS; OTHER SEEDING RATE COMBINATIONS ARE POSSIBLE.

***TEMPORARY - RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW OVER 12" IN HEIGHT BEFORE MOWING, OTHERWISE FESCUE MAY BE SHADED OUT.

EROSION CONTROL LEGEND

SYMBOL	DESCRIPTION	DETAIL REFERENCE
	LIMITS OF DISTURBANCE	N/A
SF	SILT FENCE	1/L4.90
TP	TREE PROTECTION	10-11/L4.90
DD	DIVERSION DITCH	8/L4.90
	100 YR FLOOD ELEV.	N/A
IP	HARDWARE CLOTH & GRAVEL INLET PROTECTION	3/L4.90
IP	BLOCK & GRAVEL STONE INLET PROTECTION	7/L4.90
	HORSE SHOE INLET PROTECTION	9/L4.90
	SILT FENCE OUTLET	2/L4.90
	FLARED END SECTION (FES)	2/L9.21
CE	TEMPORARY CONSTRUCTION ENTRANCE	4/L4.90

ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH NORTH CAROLINA EROSION CONTROL SPECIFICATIONS

NOTES

1. SEE SHEET L0.10 FOR GENERAL AND SITE NOTES.
2. SEE SHEET L4.00 FOR EROSION CONTROL NOTES.

PROJECT NOTES & SEQUENCE OF CONSTRUCTION ACTIVITIES:

NOTES:

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO CONSTRUCT A TRAIL IMPROVEMENT PROJECT CALLED THE GREENVILLE LOOP TRAIL SECTION 3, ALONG THE SOUTHBOUND SIDE OF GREENVILLE LOOP ROAD FROM OLD MILITARY ROAD TO THE INTERSECTION OF PARK AVENUE AND GREENVILLE LOOP ROAD. THE LENGTH OF THE PROJECT IS APPROXIMATELY 6,350 FEET, OR ABOUT 1.2 MILES, WITH APPROXIMATELY 5.1 ACRES OF LAND DISTURBANCE WITHIN THE CLEARING LIMITS.

THERE IS AN EXISTING CONCRETE SIDEWALK, MULTIPLE DRIVEWAY ENTRANCES, RETAINING WALLS, FENCES, CURB AND GUTTER AND OTHER FEATURES ALONG THE ROUTE THAT WILL BE REMOVED AND REPLACED WITH THE NEW TRAIL. SEVERAL TYPES OF UTILITIES EXIST WITHIN THE CORRIDOR INCLUDING WATERLINES, SANITARY SEWER LINES, STORM SEWER LINES, OVERHEAD ELECTRIC LINES, AND AN UNDERGROUND FIBER OPTIC CABLE.

EXISTING VEGETATION WITHIN THE PROPOSED DISTURBED AREA VARIES FROM GRASS LAWNS TO WOODED AREAS. THE SOILS ARE PREDOMINANTLY LEON SAND AND SEAGATE FINE SAND, WITH MIXTURES OF OTHER SANDS AND LOAM SOILS. SEE ATTACHED SOILS MAP.

THE TERRAIN IS RELATIVELY FLAT, VARYING FROM LESS THAN 0.5 % TO 2% SLOPES.

PROPOSED IMPROVEMENTS

THE PROJECT WILL CONSIST OF REMOVING EXISTING SIDEWALK, ASPHALT ROADWAY, AND PARTIAL REMOVAL OF EXISTING DRIVEWAYS ALONG THE CORRIDOR, TO BE REPLACED WITH A NEW, 10' WIDE ASPHALT TRAIL, CURB AND GUTTER, HANDICAP RAMPS, ASPHALT REPAIR AREAS, NEW PAINT STRIPING WHERE REQUIRED, AND OTHER ASSOCIATED WORK. AFFECTED DRIVEWAYS WILL BE RECONSTRUCTED WITH NEW DRIVEWAY APRONS, WITH TRANSITIONS FROM THE NEW DRIVEWAY SECTION INTO THEIR EXISTING DRIVEWAY MATERIAL. NEW GRASS AND LANDSCAPING MATERIALS WILL BE PLANTED ALONG THE ROUTE. AT INTERSECTIONS, ACCESIBLE RAMPS WILL BE INSTALLED IF NOT ALREADY EXISTING. PORTIONS OF THE EXISTING UTILITIES WILL BE RELOCATED TO AVOID CONFLICTS WITH THE PROPOSED CONSTRUCTION, WHILE OTHER UTILITIES WILL REMAIN IN PLACE, INCLUDING SANITARY SEWER AND LIGHT POLES.

THE WIDTH OF THE REQUIRED CLEARING, AS MEASURED FORM THE STREET TO THE LIMITS OF DISTURBANCE VARIES FROM APPROXIMATELY 20 FEET TO 30 FEET, WITH AN AVERAGE OF ABOUT 25 FEET. CUT AND FILL SLOPES WILL BE REQUIRED TO INSTALL THE NEW TRAIL SECTION WITH SLOPES NOT TO EXCEED 3:1.

CRITICAL AREAS

THE SITE IS LOCATED IN PREDOMINANTLY SAND OR FINE SAND SOILS TYPICAL OF THE REGION. CRITICAL AREAS REQUIRING ATTENTION WILL BE SLOPES EXPOSED TO HEAVY RAINS DURING THE CONSTRUCTION, WHICH MAY CAUSE LOSS OF SOIL OUT OF THE PROJECT AREA. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE TEMPORARY SLOPE PROTECTION MEASURES DURING CONSTRUCTION SUCH AS WOVEN BIODEGRADABLE JUTE OR COCONUT FIBER MATTING TO MINIMIZE SOIL LOSS FROM RAINFALL EVENTS.

AFTER COMPLETION OF CONSTRUCTION, ALL CRITICAL SLOPE AREAS MUST HAVE A GOOD STAND OF GRASS ESTABLISHED. SEDIMENT CONTROL MEASURES MUST BE INSPECTED AND MAINTAINED AS REQUIRED IN THE SCHEDULE. NO SEDIMENT CONTROL MEASURES ARE ALLOWED TO BE REMOVED UNTIL APPROVAL BY THE NCDEQ INSPECTOR.

SEDIMENT AND EROSION CONTROL MEASURES PROPOSED

THE MEASURES PROPOSED FOR SEDIMENT AND EROSION CONTROL WILL CONSIST OF THE FOLLOWING:

- TEMPORARY CONSTRUCTION ENTRANCE
- SILT FENCE
- SILT FENCE OUTLET
- INLET PROTECTION
- TREE PROTECTION FENCING
- DIVERSION DITCH

DEMOLITION/TREE REMOVAL/CLEARING/GRUBBING:

IT IS ANTICIPATED THAT THE WORK ALONG THE MILE LONG ROUTE WILL GENERALLY FOLLOW THIS SEQUENCE:

PHASE 1A:

1) OBTAIN GRADING PERMIT.
2) FLAG / MARK THE LIMITS OF DISTURBANCE.
3) A PRE-CONSTRUCTION CONFERENCE MUST BE HELD 48 HOURS PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES. THE EROSION CONTROL INSPECTOR, ENGINEER, AND CONTRACTOR SHALL BE PRESENT TO SATISFY THE REQUIREMENTS.
4) ENSURE THAT ALL UTILITIES HAVE BEEN APPROVED TO REMAIN OR RELOCATED OUT OF THE CONSTRUCTION LIMITS.
5) INSTALL TRAFFIC CONTROL MEASURES, INITIAL EROSION AND SEDIMENT CONTROL DEVICES ALONG THE ENTIRE LENGTH OF THE PROPOSED CONSTRUCTION. THIS INCLUDES THE CONSTRUCTION ENTRANCES, SILT FENCE, SILT FENCE OUTLETS, HORSESHOE RING FILTERS, INLET PROTECTION, CLEAR WATER DIVERSION DITCHES, TREE PROTECTION, AND OTHER REQUIRED MEASURES.
6) SCHEDULE SITE INSPECTION AND OBTAIN APPROVAL FROM NCDEQ PRIOR TO BEGINNING CLEARING.
7) CONTRACTOR TO STOCKPILE ANY REQUIRED MATERIALS WITHIN THE CLEARED AREAS ADJACENT TO THE CONSTRUCTION ENTRANCES AND ALONG THE LINEAR CLEARED PATH USING CONTRACTOR MEANS AND METHODS
8) CONTRACTOR TO MINIMIZE DISRUPTION TO TRAFFIC DURING THE WORK.
9) ONCE APPROVAL IS OBTAINED FROM NCDEQ, BEGIN CLEARING AND GRUBBING. ALL REMOVED VEGETATION AND DEMOLISHED ITEMS SHALL BE DISPOSED OF IN AN APPROVED DEBRIS WASTE LANDFILL IN ACCORDANCE WITH ALL APPLICABLE PERMITTING REQUIREMENTS.
10) STOCKPILE ANY EARTH MATERIALS TO BE REUSED AS SUITABLE FILL OR TOPSOIL.
11) AFTER INITIAL CLEARING, INSPECT ALL EROSION CONTROL DEVICES AND REPAIR AS NEEDED.
12) ALL STREETS AND DRIVEWAYS SURROUNDING THE PROJECT AREA SHALL BE KEPT CLEAN AT ALL TIMES.
13) PLACE TEMPORARY SEEDING ON ALL DISTURBED AREAS THAT WILL BE IDLE 14 DAYS OR LONGER.

PHASE 1B:

1) UTILIZE THE TRAFFIC CONTROL PLAN AND FLAGGING PERSONNEL TO FINALIZE REMOVAL OF PORTIONS OF THE EXISTING ASPHALT AND CURB AND GUTTER ALONG THE ROUTE IN STAGES. IT IS ANTICIPATED THAT THE CONTRACTOR WILL WORK AT ONE CONSTRUCTION ENTRANCE AT A TIME AND LIMIT THE WORK TO NOT EXCEED 200 FEET IN LENGTH. POSTED SPEED LIMIT IS 40 MPH. ALL WORK NOT COMPLETED BY THE END OF THE WORKDAY SHALL BE TEMPORARILY SECURED IN ACCORDANCE WITH ALL NCDOT AND OSHA REGULATIONS. THIS MAY INCLUDE BUT NOT LIMITED TO: TEMPORARY DRUM BARRELS, PORTABLE CONCRETE BARRIERS, FLASHING LIGHTS, PORTABLE WORK ZONE SIGNS, STEEL PLATES AND SUPPORTS, AND OTHER WORK ZONE TRAFFIC CONTROL DEVICES AS REQUIRED ALONG THE ROUTE.
   a. INSTALL THE TEMPORARY LANE CLOSURE NCDOT 1101.02 FOR THE WORK AREA.
   b. SAW CUT THE EXISTING ROADWAY WHERE NEW CURB AND GUTTER WILL BE INSTALLED.
   c. REMOVE AND PROPERLY DISPOSE OF THE EXISTING ROADWAY, CURB AND GUTTER, STORM SEWER, DRIVEWAYS AND OTHER ITEMS TO BE DEMOLISHED.

PHASE 2:

1) THIS PHASE IS FOR THE INSTALLATION OF NEW STORM SEWER, INLETS, AND TRAIL AS SHOWN ON THE PLAN. EXCAVATION, BACKFILLING AND COMPACTION EQUIPMENT SHALL ENTER THE SITE IN THE DESIGNATED CONSTRUCTION ENTRANCES AND WORK IN A LINEAR FASHION ALONG THE CONSTRUCTION AREA. EXCAVATION EQUIPMENT SHALL ONLY WORK IN AREAS DESIGNATED WITHIN THE LIMITS OF DISTURBANCE.
   a. INSTALL THE STORM SEWER SYSTEM AND INLETS. COMPACT ALL TRENCHES IN ACCORDANCE WITH THE SPECIFICATIONS. PROVIDE INLET PROTECTION FOR ALL COMPLETED INLETS.
   b. INSTALL THE CURB AND GUTTER AND ALLOW TO CURE PRIOR TO INSTALLING ASPHALT REPAIR AREAS.
   c. INSTALL ASPHALT REPAIR AREAS ALONG THE CURB AS DESIGNATED IN THE PLANS.
   d. PERFORM GRADING AND COMPACTION OF PROPOSED FILL AREAS.
   e. INSTALL NEW TRAIL SECTIONS.
   f. PLACE TEMPORARY SEEDING ON ALL DISTURBED AREAS THAT WILL BE IDLE 14 DAYS OR LONGER.
   g. PERMANENT SURFACE STABILIZATION SHALL BE INSTALLED FOR ALL AREAS WITHIN 14 DAYS AFTER FINAL GRADE HAS BEEN REACHED. AS NECESSARY, FERTILIZE, WATER AND RESEED AS REQUIRED TO ESTABLISH AND MAINTAIN A VIGOROUS STAND OF GRASS.
   h. REMOVE AND PROPERLY DISPOSE OF ALL ACCUMULATED SEDIMENT FROM TRAPPING MEASURES.
   i. SCHEDULE A FINAL INSPECTION WITH THE INSPECTOR.
   j. UPON APPROVAL BY THE EROSION CONTROL INSPECTOR, REMOVE TEMPORARY EROSION CONTROL MEASURES, SMOOTH AREA AND APPLY APPROPRIATE STABILIZATION.
   k. STORMWATER PERMIT INSPECTION REPORTS SHALL BE PERFORMED BY THE CONTRACTOR UNTIL NOTIFIED OTHERWISE BY THE EROSION CONTROL INSPECTOR.

TREE PROTECTION NOTES:

1. TREE PROTECTION FENCING MUST BE IN PLACE PRIOR TO ANY DEMOLITION, LAND DISTURBANCE OR ISSUANCE OF A GRADING PERMIT. OR OBTAIN A GRADING PERMIT THEN TREE PROTECTION FENCING MUST BE IN PLACE PRIOR TO ANY DEMOLITION, LAND DISTURBANCE
2. TREE PROTECTION FENCING SHALL INCLUDE WARNING SIGNS POSTED IN BOTH ENGLISH AND SPANISH, AS FOLLOWS: "NO TRESPASSING/TREE PROTECTION AREA/PROHIBIDO ENTRAR / ZONA PROTECTORA PARA LOS ÁRBOLES."
3. PROTECTION OF EXISTING VEGETATION: AT THE START OF GRADING INVOLVING THE LOWERING OF EXISTING GRADE AROUND A TREE OR STRIPPING OF TOPSOIL, A CLEAN, SHARP, VERTICAL CUT SHALL BE MADE AT THE EDGE ON THE TREE ROOTS OUTSIDE OF THE TREE SAVE AREA. THIS SHALL OCCUR AT THE SAME TIME THAT OTHER EROSION CONTROL MEASURES ARE INSTALLED. THE TREE PROTECTION FENCING SHALL BE INSTALLED ON THE SIDE OF THE CUT FARTHEST AWAY FROM THE TREE TRUNK AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IN THE VICINITY OF THE TREES IS COMPLETE.
4. NO STORAGE OF MATERIALS, FILL, OR EQUIPMENT AND NO TRESPASSING SHALL BE ALLOWED WITHIN THE BOUNDARY OF THE PROTECTED TREE AREA.
5. TREE PROTECTION AREA: EQUALS ONE FOOT OF RADIUS FOR EVERY INCH OF DIAMETER OF EXISTING TREES, OR SIX FOOT RADIUS, WHICHEVER IS GREATER. NO DISTURBANCE ALLOWED WITHIN THIS AREA.

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED IN BEST LOCATION BASED ON FIELD CONDITIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF ALL EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF CONSTRUCTION ENTRANCES AS NECESSARY TO PREVENT THE TRACKING OF SEDIMENT OFF-SITE. THE OWNER IS RESPONSIBLE FOR MAINTENANCE OF ALL PERMANENT EROSION CONTROL METHODS AFTER CONSTRUCTION IS COMPLETE, IF ANY PERMANENT METHODS ARE REQUIRED.
4. APPROVAL OF THIS EROSION AND SEDIMENTATION CONTROL (ESC) PLAN DOES NOT CONSTITUTE AN APPROVAL OF DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.).
5. THE IMPLEMENTATION OF THESE ESC PLANS AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR AND ESC SUPERVISOR UNTIL ALL CONSTRUCTION IS APPROVED.
6. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE LIMITS OF DISTURBANCE (L.O.D.) SHALL BE PERMITTED. THE L.O.D. SHALL BE MAINTAINED BY THE ESC SUPERVISOR FOR THE DURATION OF CONSTRUCTION.
7. THE ESC FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO OR IN CONJUNCTION WITH ALL CLEARING AND GRADING SO AS TO ENSURE THAT THE TRANSPORT OF SEDIMENT TO DRAINAGE SYSTEMS, AND ADJACENT PROPERTIES IS MINIMIZED.
8. THE ESC FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND MODIFIED TO ACCOUNT FOR CHANGING SITE CONDITIONS (E.G., ADDITIONAL SUMP PUMPS, RELOCATION OF DITCHES AND SILT FENCES, ETC.).
9. THE ESC FACILITIES SHALL BE INSPECTED DAILY BY THE ESC SUPERVISOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING. WRITTEN RECORDS SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE DURATION OF THE PROJECT. COPIES OF THE WRITTEN INSPECTION REPORTS SHALL BE PROVIDED TO THE OWNER'S REPRESENTATIVE TWICE PER WEEK AND AFTER RAINS OF GREATER THAN 0.5". RAIN GAUGE REQUIRED ON SITE.
10. ANY AREAS OF EXPOSED SOILS THAT WILL NOT BE DISTURBED FOR FOURTEEN DAYS SHALL BE IMMEDIATELY STABILIZED WITH THE APPROVED ESC METHODS (E.G., SEEDING, MULCHING, PLASTIC COVERING, ETC.).
11. THE ESC FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN FORTY EIGHT (48) HOURS FOLLOWING A STORM EVENT.
12. AT NO TIME SHALL MORE THAN ONE (1) FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED PRIOR TO PAVING. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM.
13. STABILIZED CONSTRUCTION ENTRANCES AND ROADS SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT IF NECESSARY. ADDITIONAL MEASURES, SUCH AS WASH PADS, MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
14. WHERE STRAW MULCH FOR TEMPORARY EROSION CONTROL IS REQUIRED, IT SHALL BE A MINIMUM THICKNESS OF 2 TO 3 INCHES.
15. INTERIM SLOPES MAY BE GRADED TO A MAXIMUM SLOPE OF 2:1 (HORIZONTAL: VERTICAL); CUT SLOPES SHALL BE LIMITED TO A MAXIMUM SLOPE OF 1.5:1.
16. THE SURFACE OF AREAS SLOPES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL THAT ARE TO RECEIVE INTERIM FILL SHALL BE PLOWED, FURROWED, TILLED OR BROKEN UP PRIOR TO PLACING FILL SO THAT FILL MATERIAL WILL BOND WITH EXISTING ' SURFACE. INTERIM FILL SHALL BE PLACED AS SPECIFIED FOR PERMANENT FILLS AND IN LIFTS NOT GREATER THAN 6".
17. PROVIDE DUST CONTROL MEASURES INCLUDING, BUT NOT LIMITED TO, WETTING DOWN TO CONTROL DUST ON SITE, IN ORDER TO PREVENT ANNOYANCE/AND OR DAMAGE TO ADJACENT SITES. CALCIUM CHLORIDE OR ANY OTHER CHEMICAL MATERIAL MAY NOT BE USED ON SUBGRADES OF AREAS TO BE SEEDED OR PLANTED.
18. SEDIMENT LADEN RUNOFF FROM EXCAVATIONS SHALL NOT BE PUMPED DIRECTLY TO STORM DRAINAGE.
19. INSPECTOR REFERS TO LOCAL JURISDICTIONAL (NCDENR OR LOCAL) LAND QUALITY INSPECTOR OR HIS REPRESENTATIVE. FIELD INSPECTIONS MAY REQUIRE ADDITIONAL SEDIMENTATION AND EROSION CONTROL MEASURES AS DEEMED NECESSARY BY THE INSPECTOR.
20. CONSTRUCTION AND MAINTENANCE OF ALL EROSION CONTROL DEVICES SHALL CONFORM TO THE STANDARDS SET FORTH IN THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT, HEALTH AND NATURAL RESOURCES LAND QUALITY SECTION EROSION AND SEDIMENT CONTROL PLANNING LAND DESIGN MANUAL.
21. NOTIFICATION OF LAND RESOURCES SEDIMENT AND EROSION CONTROL SELF-INSPECTION PROGRAM: THE PERSON RESPONSIBLE FOR LAND-DISTURBING ACTIVITIES IS REQUIRED TO INSPECT THE PROJECT AFTER EACH PHASE OF THE PROJECT AND CONTINUED UNTIL PERMANENT GROUND COVER IS ESTABLISHED IN ACCORDANCE WITH NCGS 113A-54.1 AND 15A NCAC 4B.0131 TO MAKE SURE THAT THE APPROVED EROSION AND SEDIMENTATION CONTROL PLAN IS BEING FOLLOWED. THE SELF-INSPECTION REPORT FORM IS AVAILABLE AS AN EXCEL SPREADSHEET FORM. HTTP://WWW.DLR.ENR.STATE.NC.US/PAGES/SEDIMENTATION_NEW.HTML
22. ANTHONY GEATHERS IS THE CITY OF WILMINGTON ENGINEERING DIVISION CONTACT: 910.341.7807, ANTHONY.GEATHERS@WILMINGTONNC.GOV

Know what's below. Call before you dig.

TOTAL AREA OF DISTURBANCE

5.74 AC/ 250,059 SF

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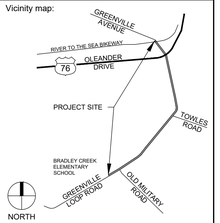
Vicinity map:



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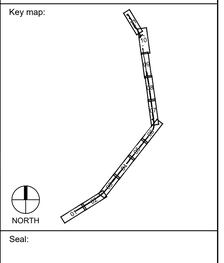

Seal:

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 13328 JEFFREY D. OWEN

10.09.2023

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SCALE: 1" = 300'

NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

EROSION CONTROL PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: SI
Approved by: CN
Sheet #: L4.00

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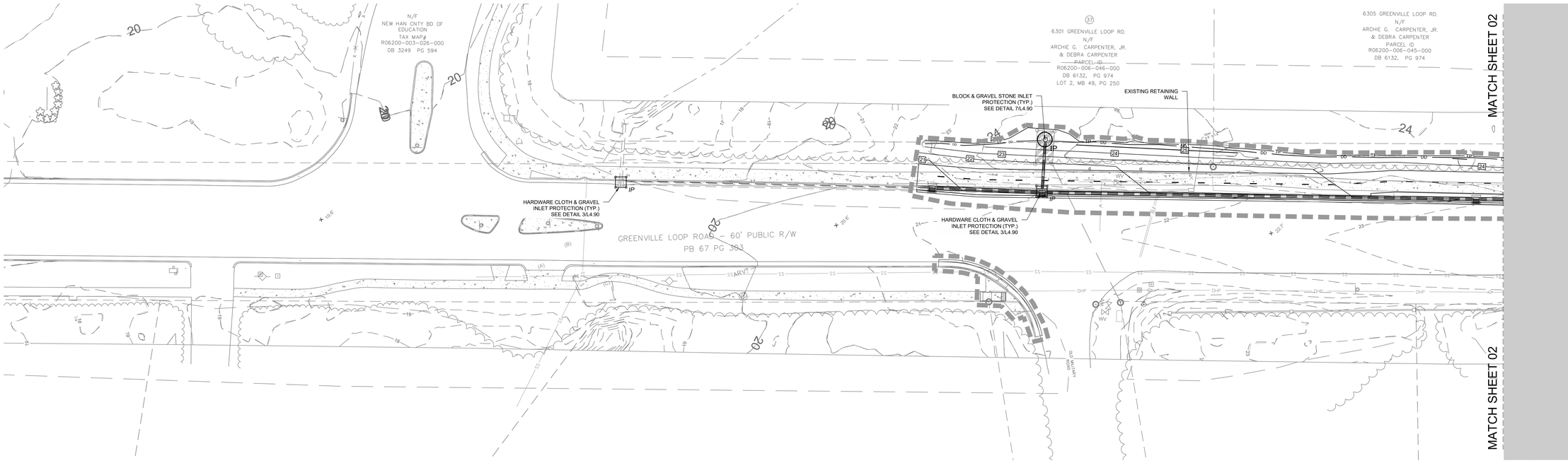

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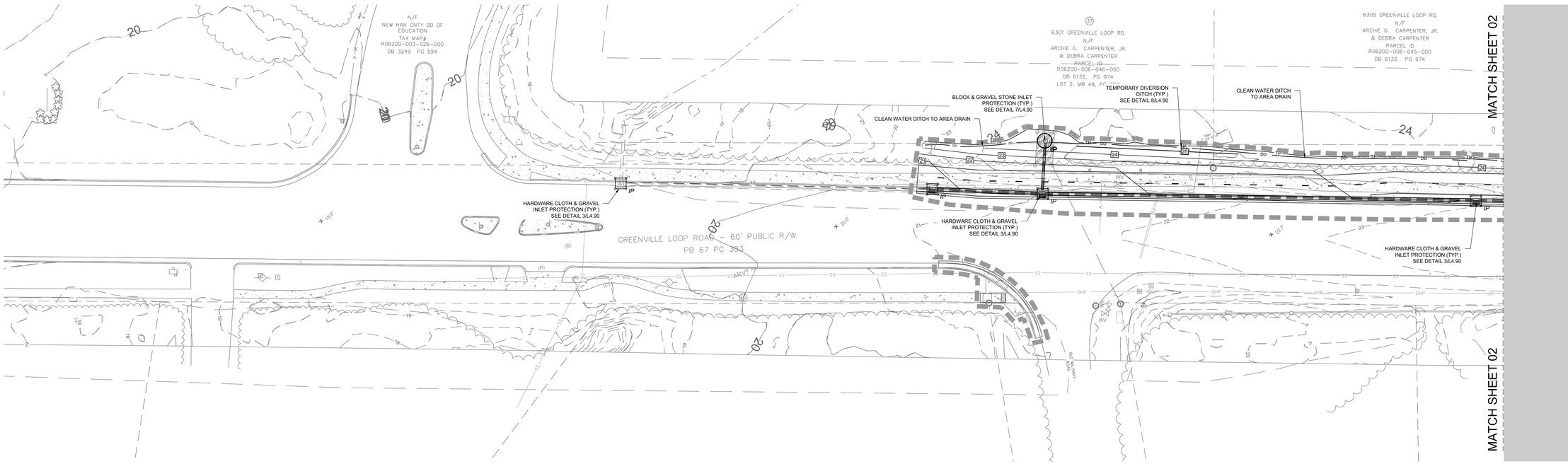

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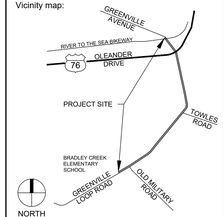

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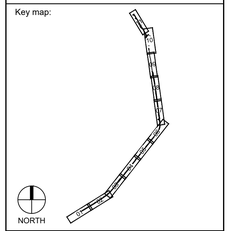

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Project:

GREENVILLE LOOP TRAIL SECTION 3

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Title:

EROSION CONTROL PLAN

Project number: L21014 Sheet #:

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Drawn by: SI

Approved by: CN

L4.01

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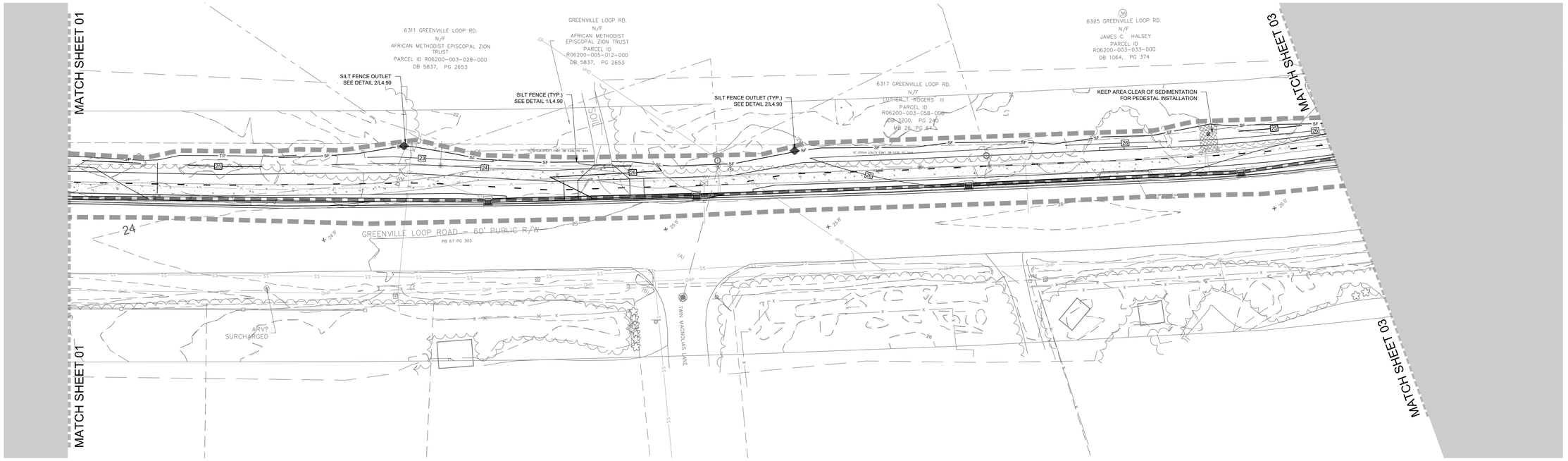

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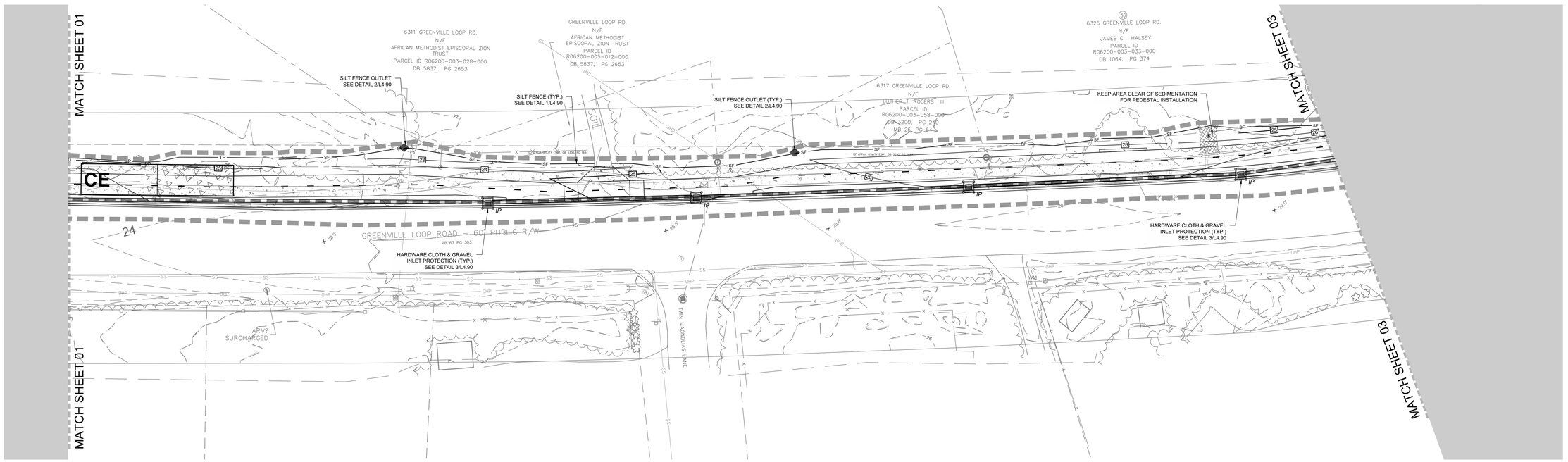

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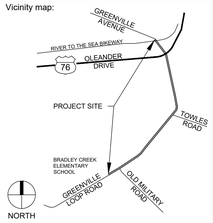

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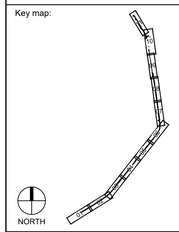

Seal:

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SCALE: 1" = 20'

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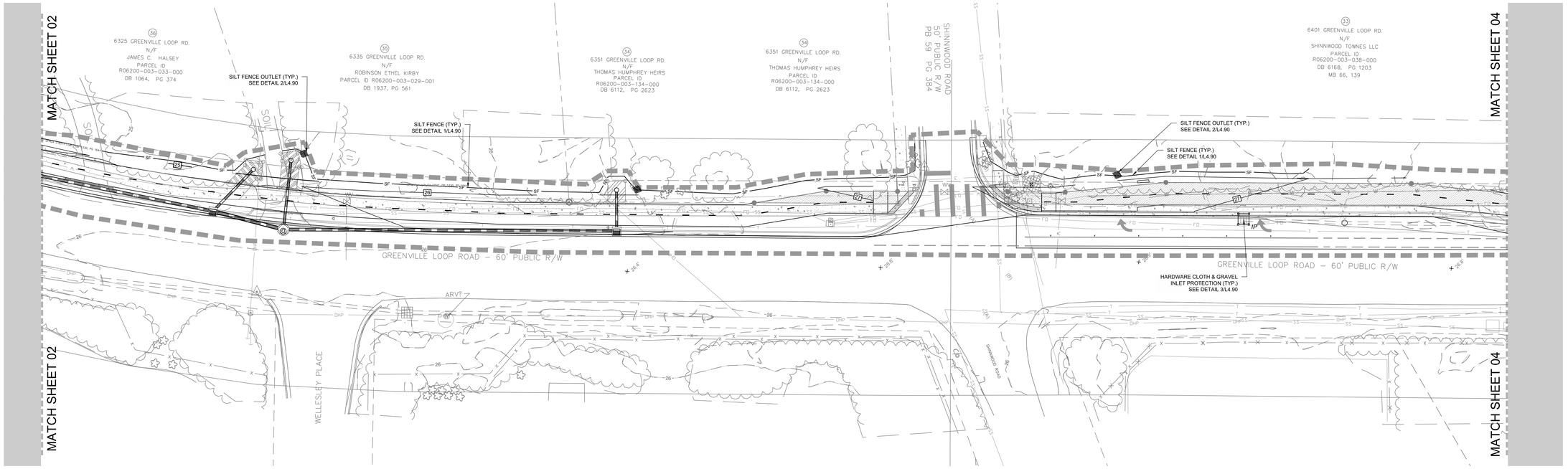

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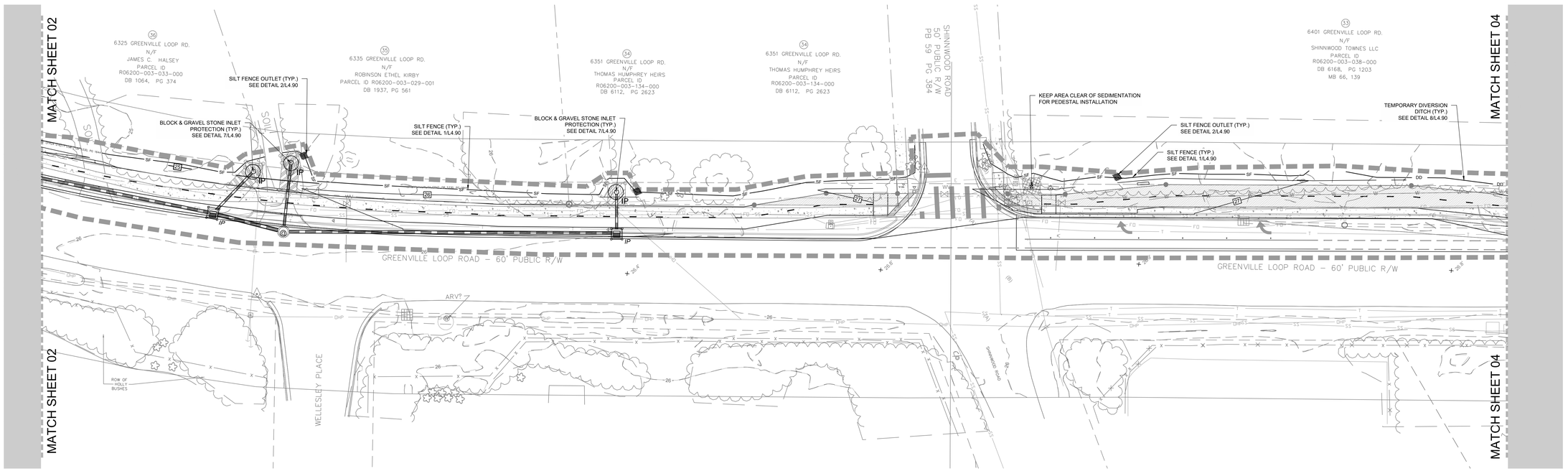

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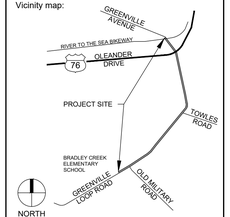

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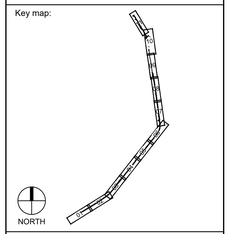

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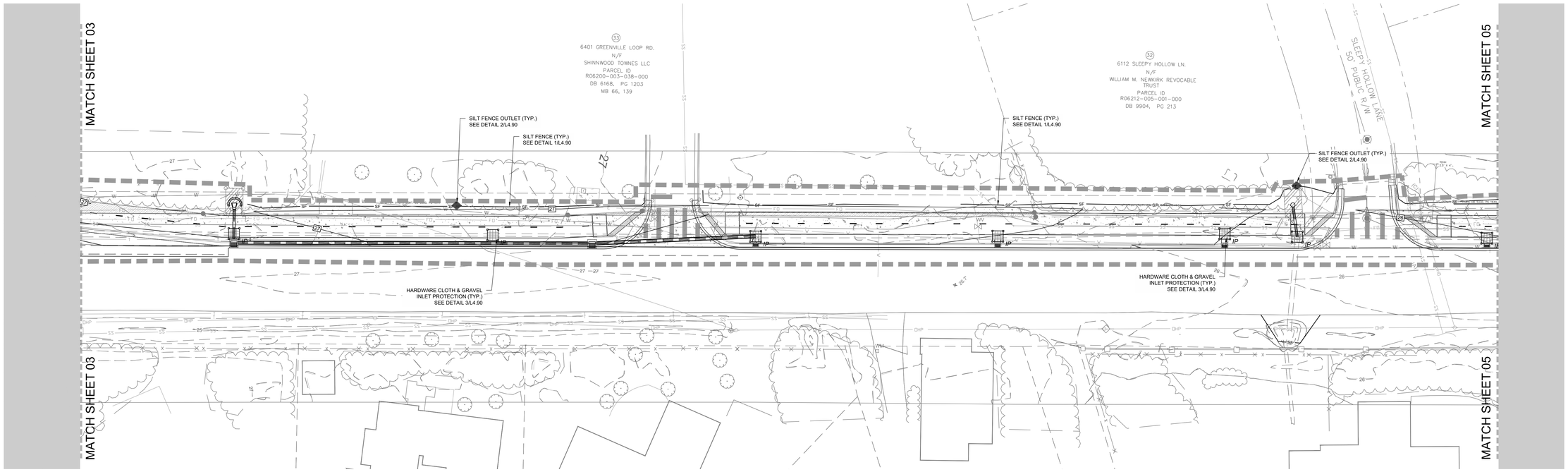

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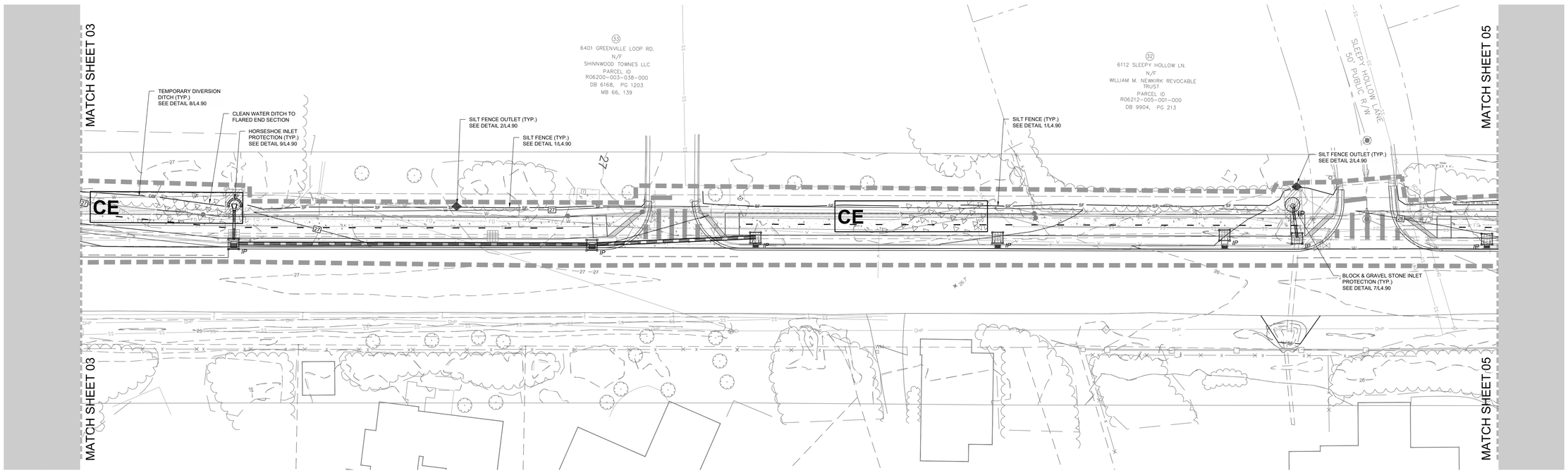

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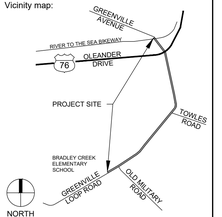
Vicinity map:



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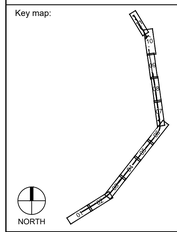

Seal:

SEAL
13328
NORTH CAROLINA
PROFESSIONAL
LICENSED
ENGINEER
CASEY D. NEAL
10.09.2023

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

EROSION CONTROL PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: SI
Approved by: CN
Sheet #: L4.04

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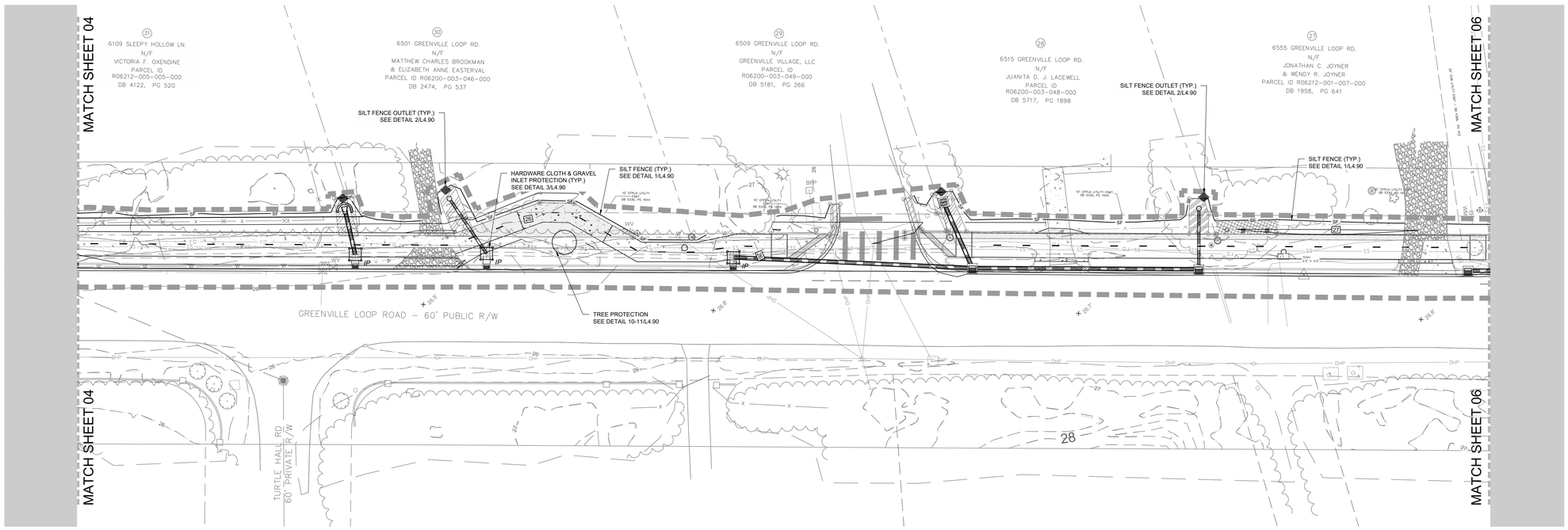

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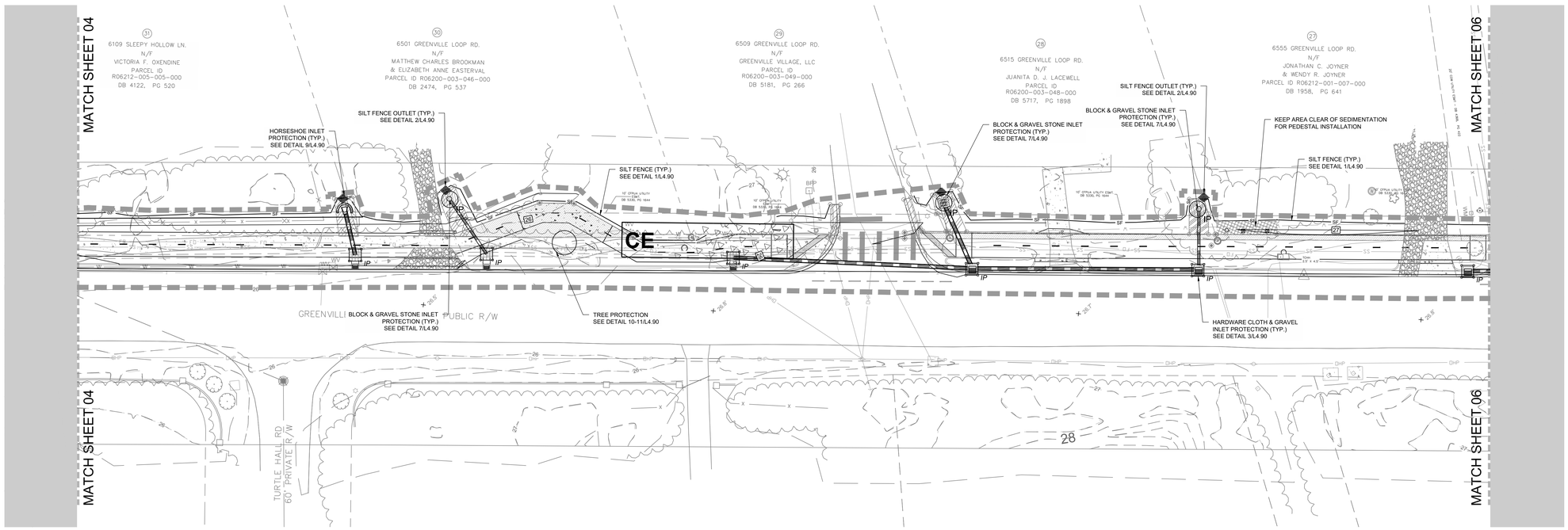

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PROJECT #: L21014

Client:

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NORTH CAROLINA

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ENGINEERING DIVISION
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WILMINGTON, NC 28402
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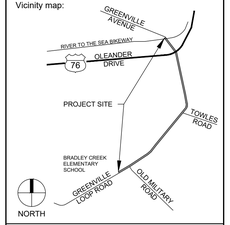
F 910.341.5881

Vicinity map:



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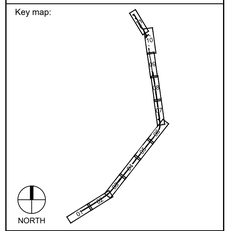

Seal:

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

EROSION CONTROL PLAN

Project number: L21014
Issued Date: 2025.04.09
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Approved by: CN
Sheet #: L4.05

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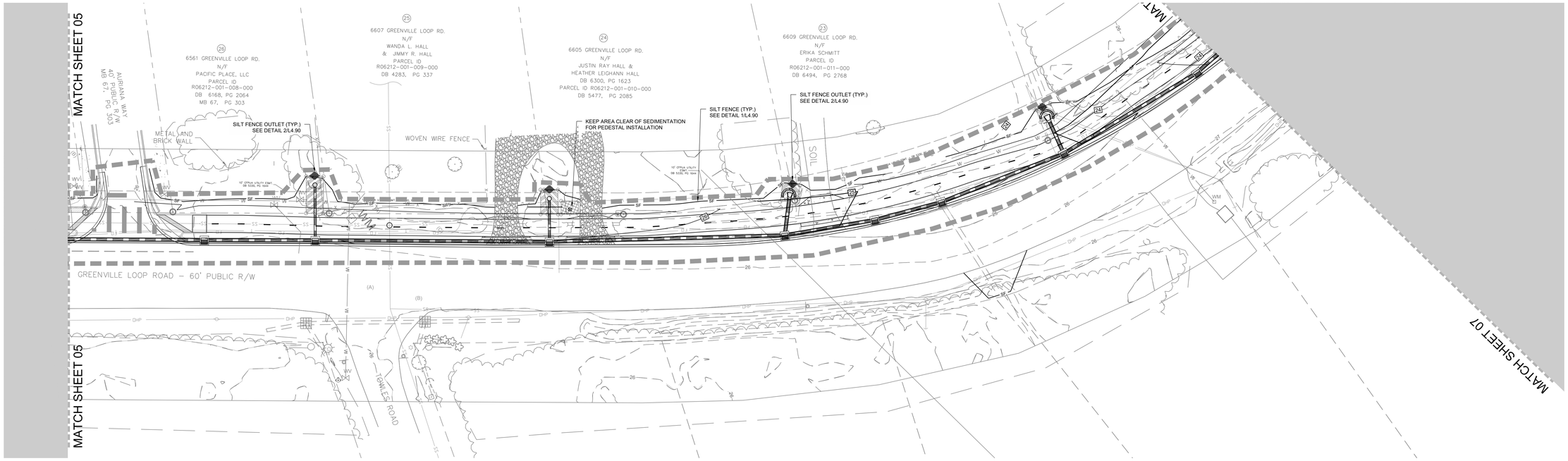

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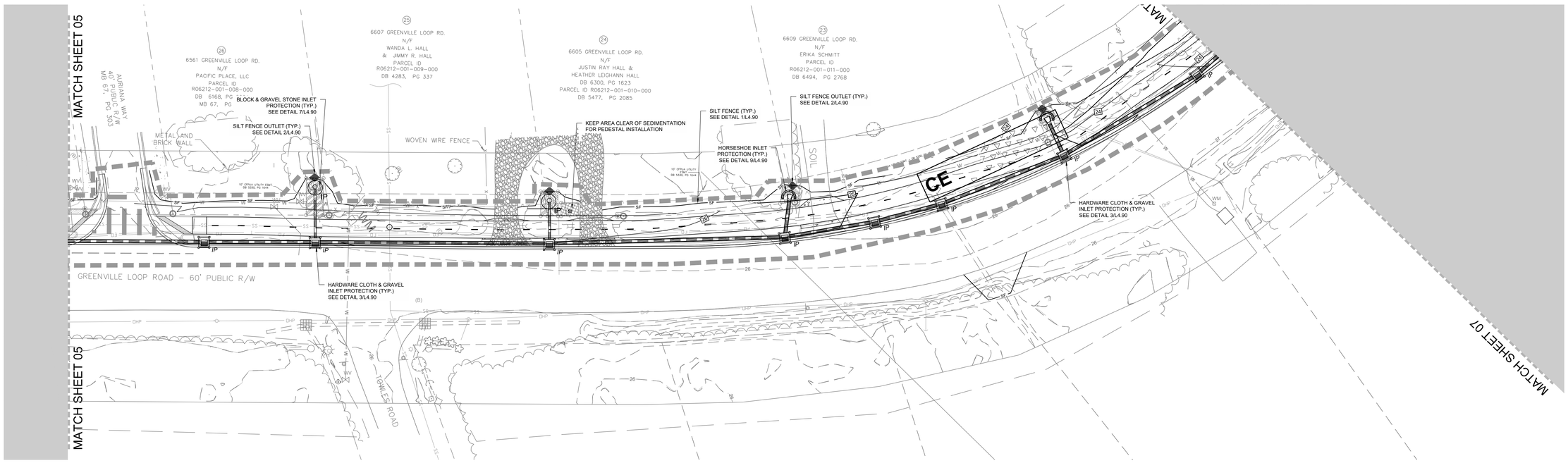

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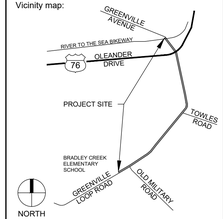
Vicinity map:



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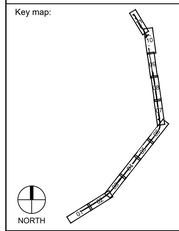

Seal:

0 10 20 40
SCALE: 1" = 20'
NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

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No.	Date	Description
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Title:

EROSION CONTROL PLAN

Project number: L21014 Sheet #: L4.06
Issued Date: 2025.04.09
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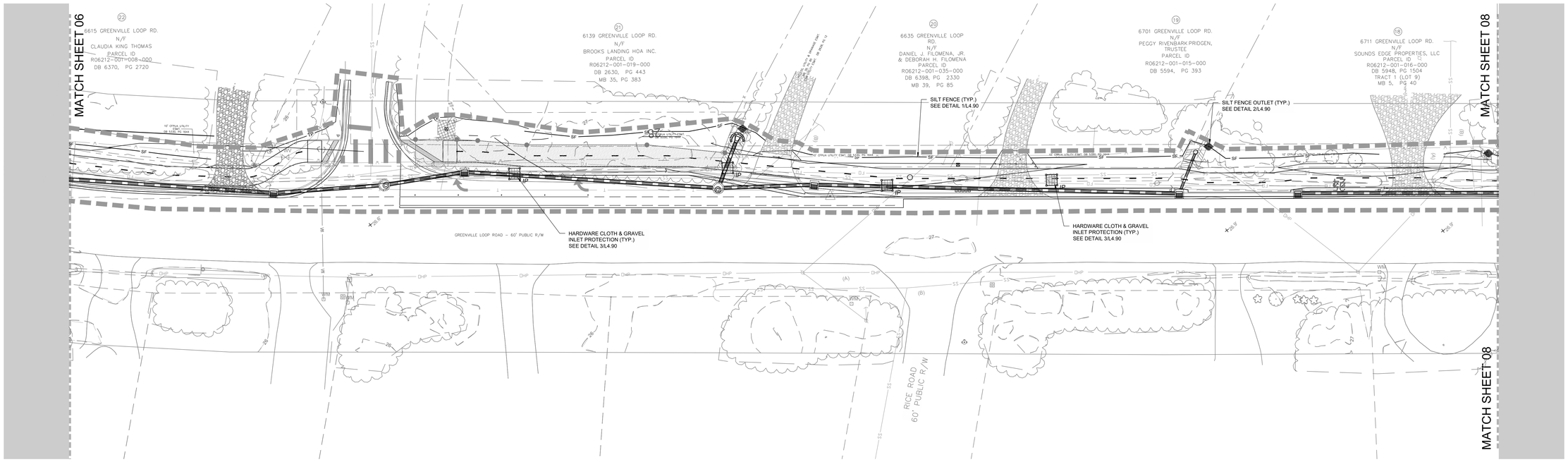

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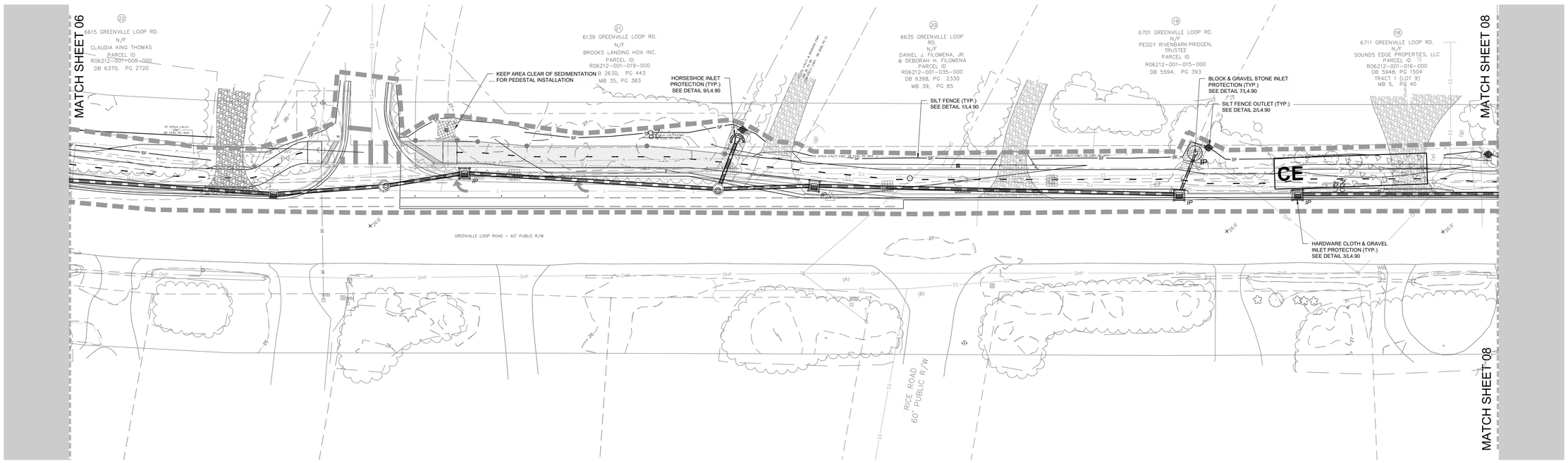

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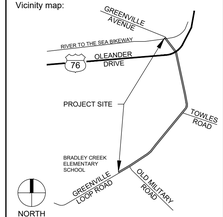
Vicinity map:



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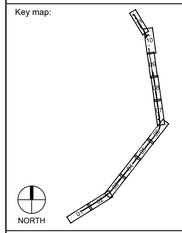

Seal:

0 10 20 40

SCALE: 1" = 20' NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

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EROSION CONTROL PLAN

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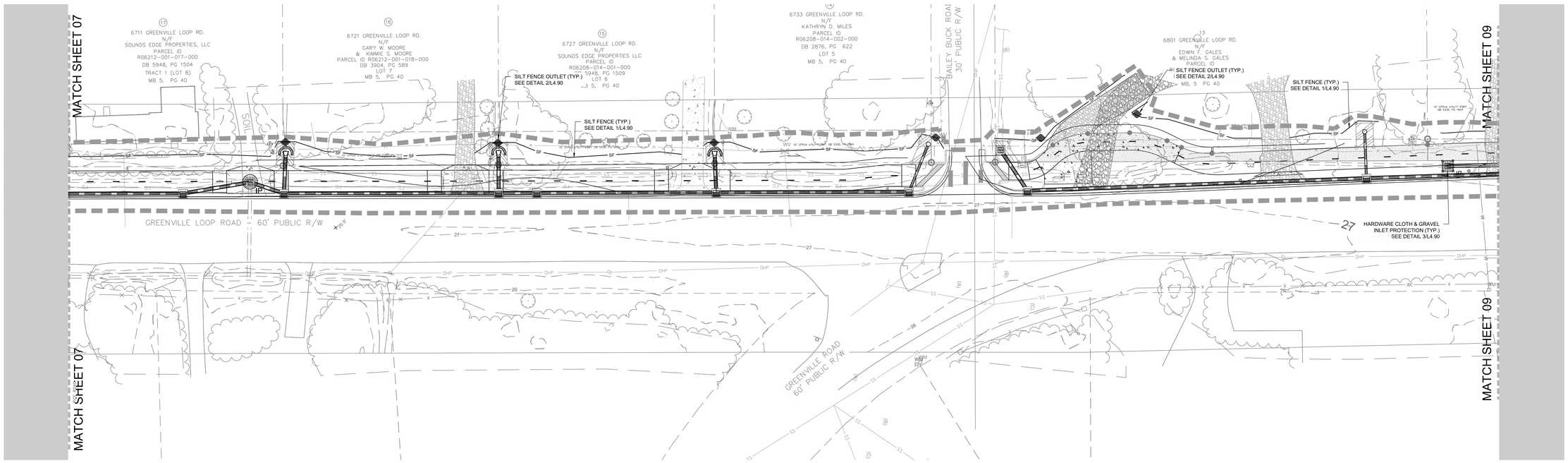

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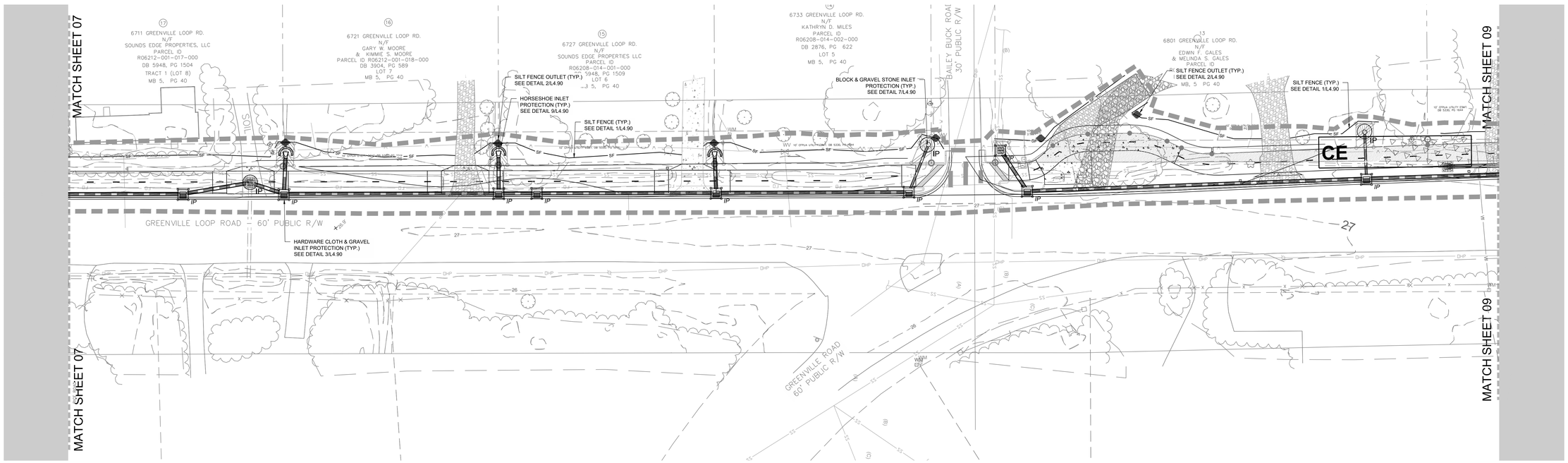

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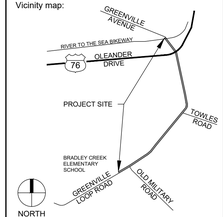
Vicinity map:



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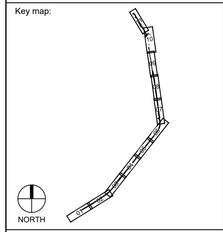

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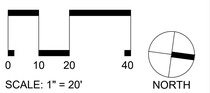

Project:

GREENVILLE LOOP TRAIL SECTION 3

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Title:

EROSION CONTROL PLAN

Project number: L21014 Sheet #: L4.08
Issued Date: 2025.04.09
Drawn by: SI
Approved by: CN

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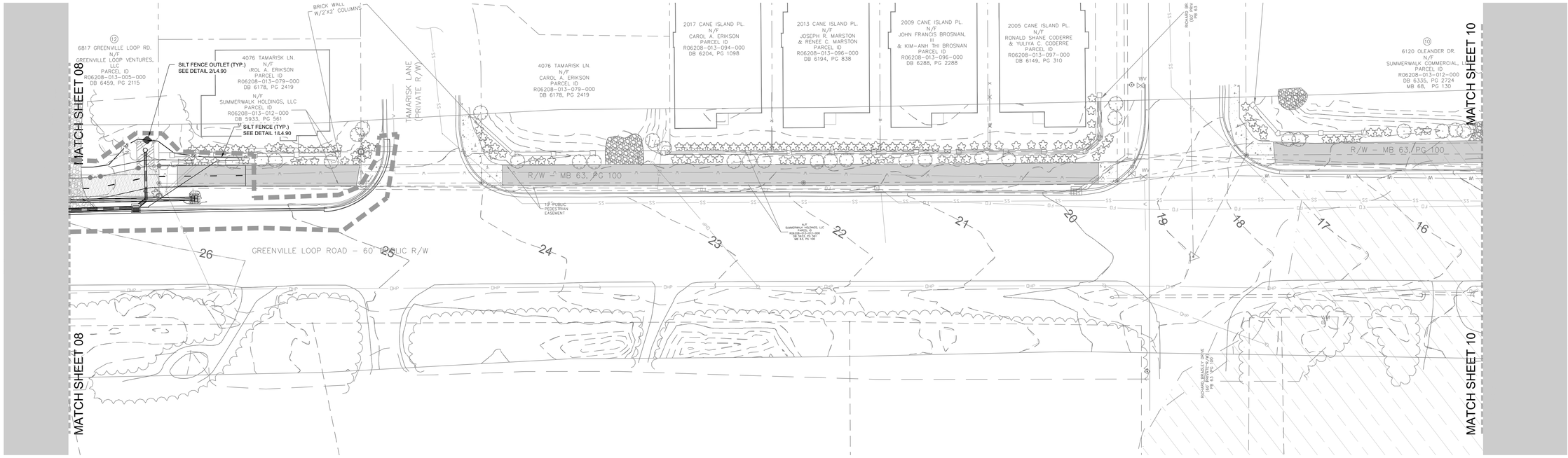

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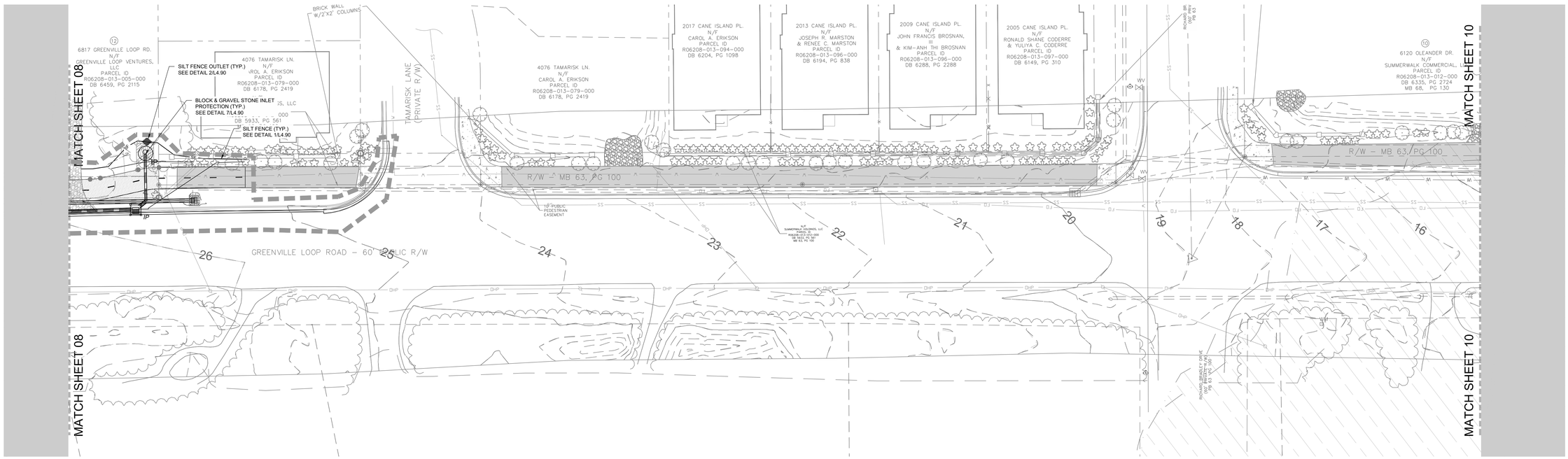

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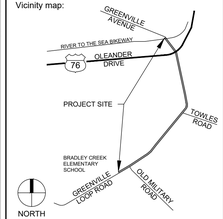
Vicinity map:



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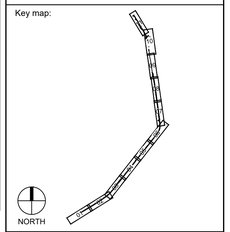

Seal:

0 # # # SCALE: 1" = ## NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

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Title:

EROSION CONTROL PLAN

Project number: L21014 Sheet #: L4.09
Issued Date: 2025.04.09
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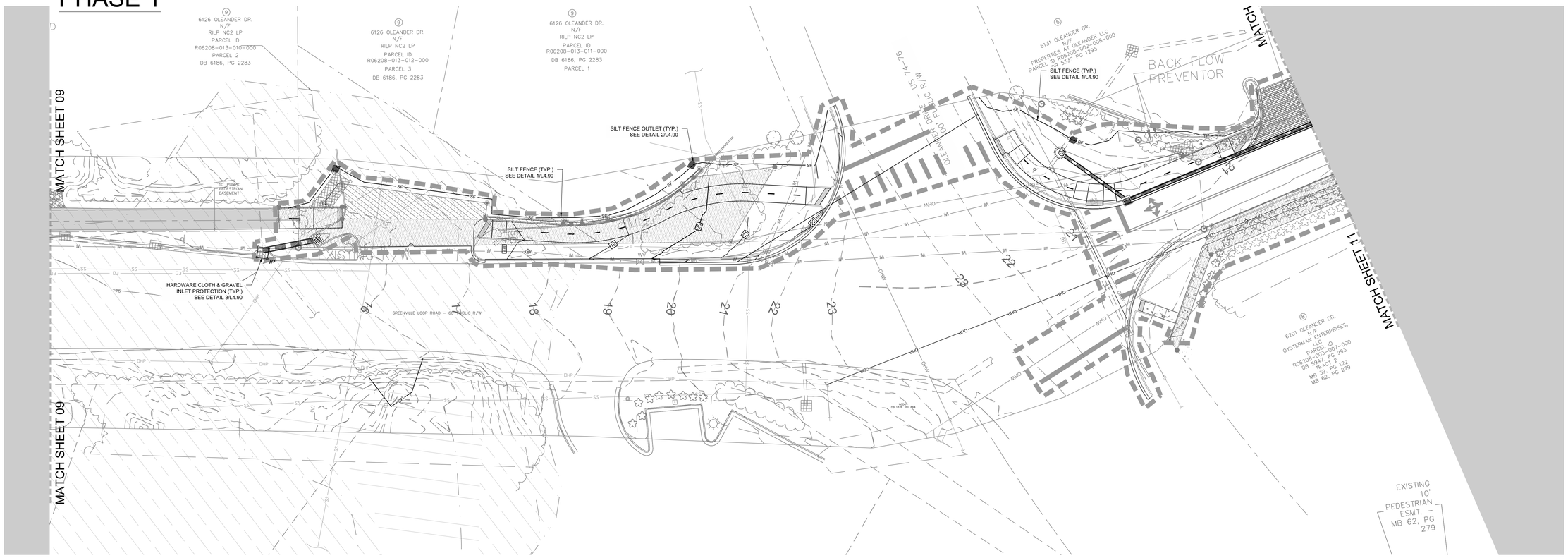

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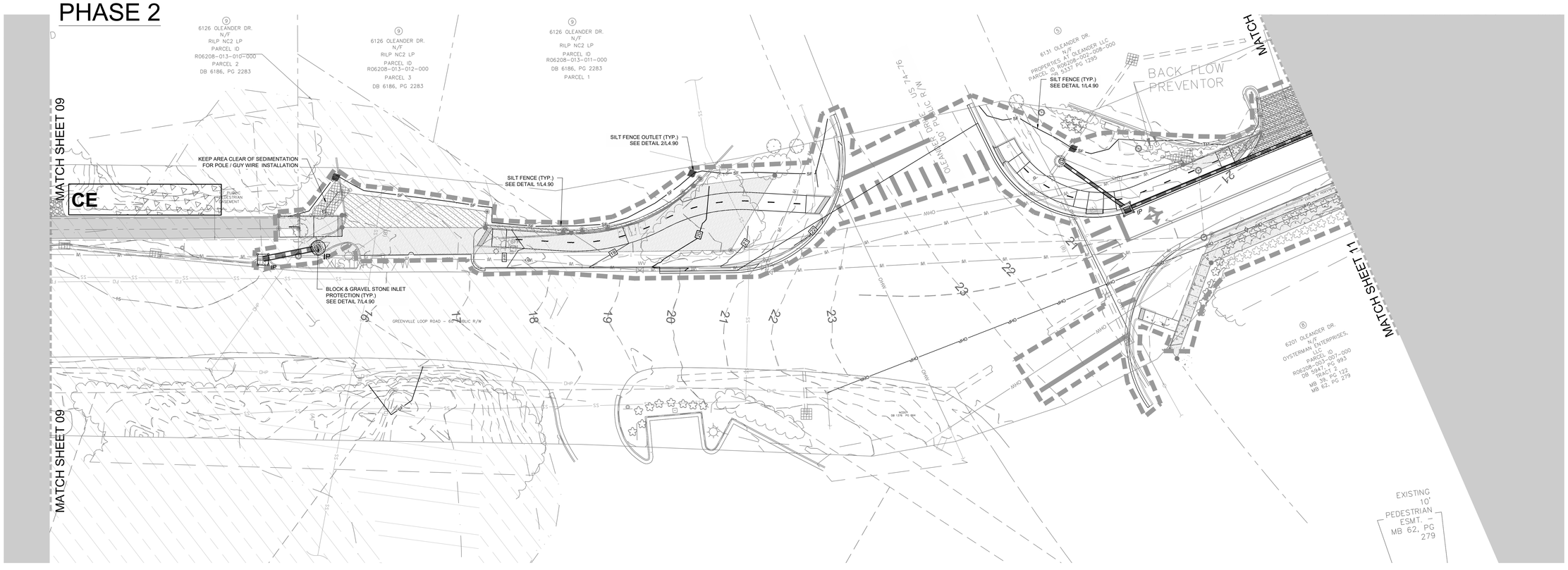

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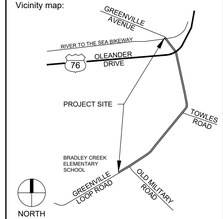
Vicinity map:



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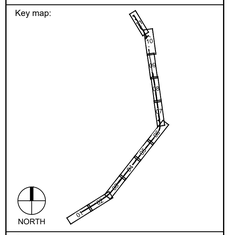

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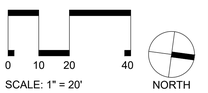

Project:

GREENVILLE LOOP TRAIL SECTION 3

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No.	Date	Description
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Title:

EROSION CONTROL PLAN

Project number: L21014 Sheet #: L4.10
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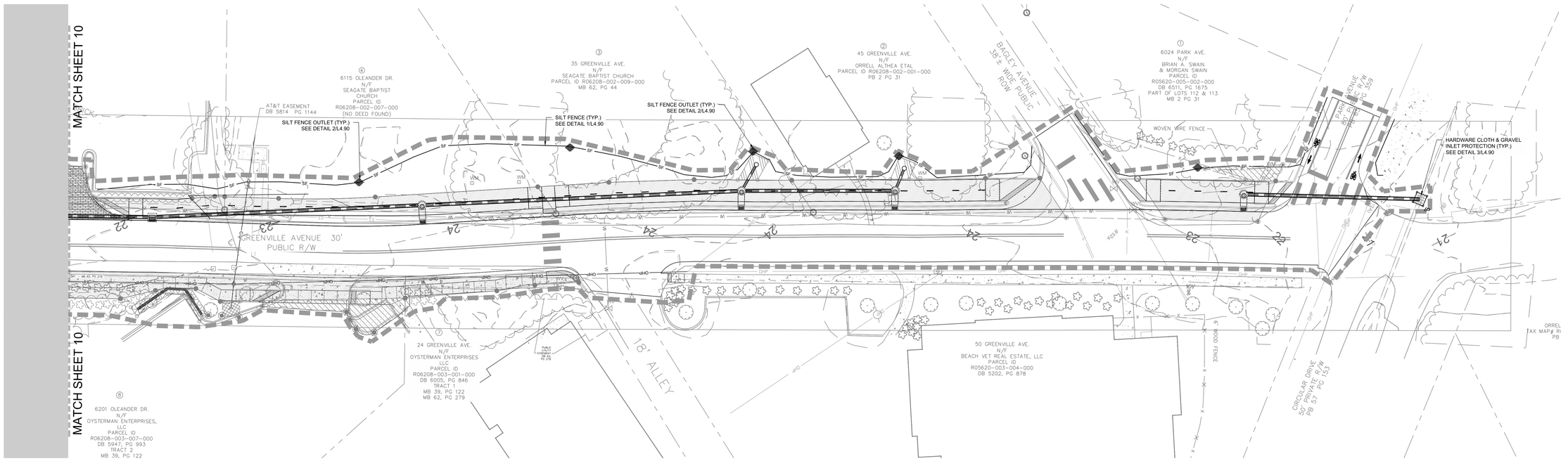

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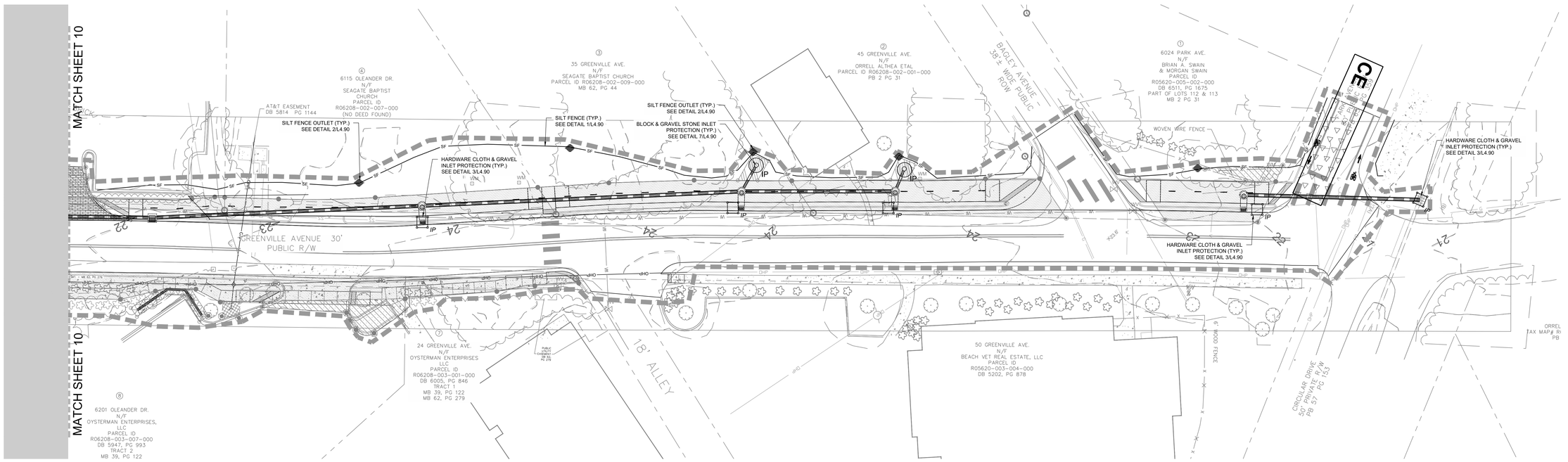

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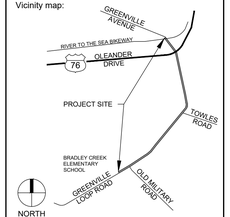
Vicinity map:



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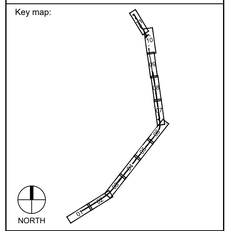

Seal:

0 10 20 40

SCALE: 1" = 20'

NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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EROSION CONTROL PLAN

Project number: L21014
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Sheet #: L4.11

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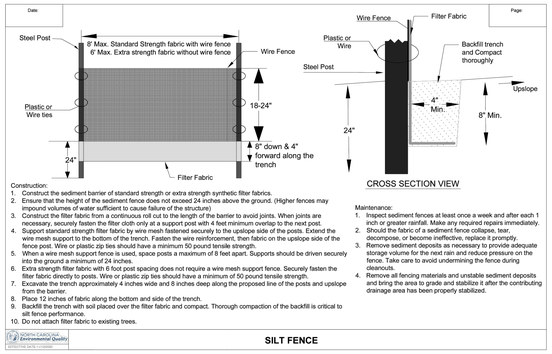
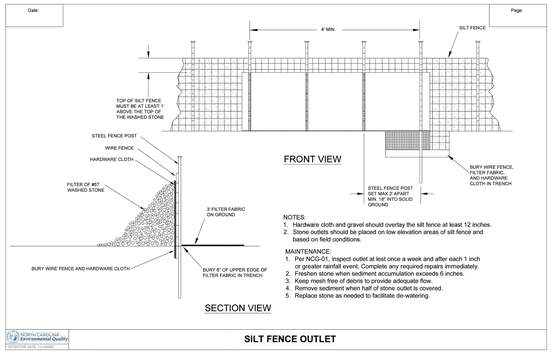


Construction:
1. Construct the sediment barrier of standard strength or extra strength synthetic filter fabrics.
2. Ensure that the height of the sediment fence does not exceed 24 inches above the ground. (Higher fences may impound volumes of water sufficient to cause failure of the structure)
3. Construct the filter fabric from a continuous roll cut to the length of the barrier to avoid joints. When joints are necessary, securely fasten the filter cloth only at a support post with 4 feet minimum overlap to the next post.
4. Support standard strength filter fabric by wire mesh fastened securely to the upslope side of the posts. Extend the wire mesh support to the bottom of the trench. Fasten the wire reinforcement, then fabric on the upslope side of the fence post. Wire or plastic zip ties should have a minimum 50 pound tensile strength.
5. When a wire mesh support fence is used, space posts a maximum of 8 feet apart. Supports should be driven securely into the ground a minimum of 24 inches.
6. Extra strength filter fabric with 6 foot post spacing does not require a wire mesh support fence. Securely fasten the filter fabric directly to posts. Wire or plastic zip ties should have a minimum of 50 pound tensile strength.
7. Excavate the trench approximately 4 inches wide and 8 inches deep along the proposed line of the posts and upslope from the barrier.
8. Place 12 inches of fabric along the bottom and side of the trench.
9. Backfill the trench with soil placed over the filter fabric and compact. Thorough compaction of the backfill is critical to silt fence performance.
10. Do not attach filter fabric to existing trees.

Maintenance:
1. Inspect sediment fences at least once a week and after each 1 inch or greater rainfall. Make any required repairs immediately.
2. Should the fabric of a sediment fence collapse, tear, decompose, or become ineffective, replace it promptly.
3. Remove sediment deposits as necessary to provide adequate storage volume for the next rain and reduce pressure on the fence. Take care to avoid undermining the fence during cleanouts.
4. Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

NORTH CAROLINA Environmental Quality — DIVISION OF WATER RESOURCES

SILT FENCE

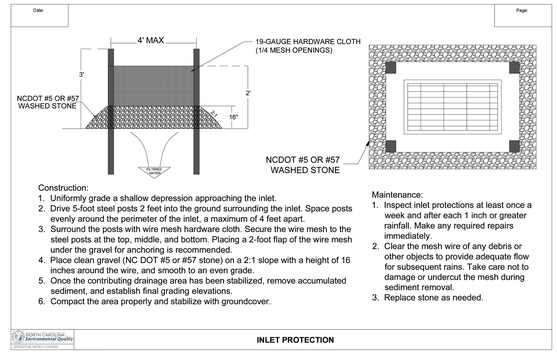


NOTES:
1. Hardware cloth and gravel should overlay the silt fence at least 12 inches.
2. Stone outlets should be placed on low elevation areas of silt fence and based on field conditions.

MAINTENANCE:
1. Per NCG-01, inspect outlet at lest once a week and after each 1 inch or greater rainfall event. Complete any required repairs immediately.
2. Freshen stone when sediment accumulation exceeds 6 inches.
3. Keep mesh free of debris to provide adequate flow.
4. Remove sediment when half of stone outlet is covered.
5. Replace stone as needed to facilitate de-watering.

NORTH CAROLINA Environmental Quality — DIVISION OF WATER RESOURCES

SILT FENCE OUTLET

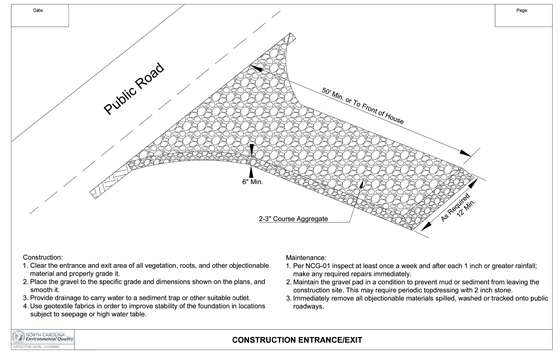


Construction:
1. Uniformly grade a shallow depression approaching the inlet.
2. Drive 5-foot steel posts 2 feet into the ground surrounding the inlet. Space posts evenly around the perimeter of the inlet, a maximum of 4 feet apart.
3. Surround the posts with wire mesh hardware cloth. Secure the wire mesh to the steel posts at the top, middle, and bottom. Placing a 2-foot flap of the wire mesh under the gravel for anchoring is recommended.
4. Place clean gravel (NC DOT #5 or #57 stone) on a 2:1 slope with a height of 16 inches around the wire, and smooth to an even grade.
5. Once the contributing drainage area has been stabilized, remove accumulated sediment, and establish final grading elevations.
6. Compact the area properly and stabilize with groundcover.

Maintenance:
1. Inspect inlet protections at least once a week and after each 1 inch or greater rainfall. Make any required repairs immediately.
2. Clear the mesh wire of any debris or other objects to provide adequate flow for subsequent rains. Take care not to damage or undercut the mesh during sediment removal.
3. Replace stone as needed.

NORTH CAROLINA Environmental Quality — DIVISION OF WATER RESOURCES

INLET PROTECTION



Construction:
1. Clear the entrance and exit area of all vegetation, roots, and other objectionable material and properly grade it.
2. Place the gravel to the specific grade and dimensions shown on the plans, and smooth it.
3. Provide drainage to carry water to a sediment trap or other suitable outlet.
4. Use geotextile fabrics in order to improve stability of the foundation in locations subject to seepage or high water table.

Maintenance:
1. Per NCG-01 inspect at least once a week and after each 1 inch or greater rainfall; make any required repairs immediately.
2. Maintain the gravel pad in a condition to prevent mud or sediment from leaving the construction site. This may require periodic topdressing with 2 inch stone.
3. Immediately remove all objectionable materials spilled, washed or tracked onto public roadways.

NORTH CAROLINA Environmental Quality — DIVISION OF WATER RESOURCES

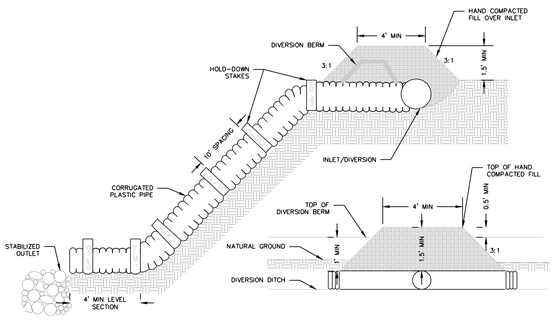
CONSTRUCTION ENTRANCE/EXIT

1 SILT FENCE — NTS
SECTION

2 SILT FENCE OUTLET — NTS
SECTION

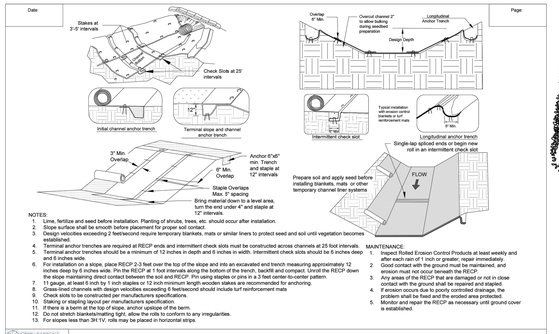
3 HARDWARE CLOTH & GRAVEL INLET PROTECTION — NTS
SECTION

4 CONSTRUCTION ENTRANCE — NTS
SECTION



X

5 SLOPE DRAIN — NTS
SECTION

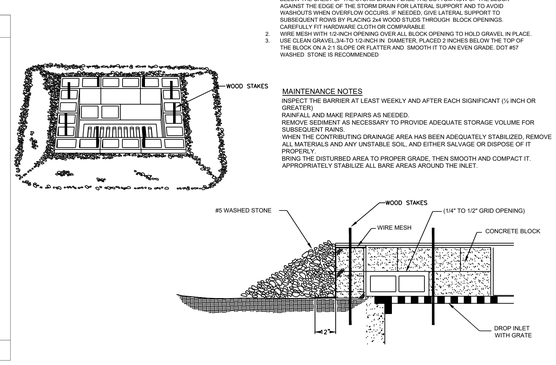

Stakes at 2'-0" intervals
Check Slots at 25' intervals
Initial channel anchor trench
Terminal slope and channel anchor trench
3" Min. Overlap
6" Min. Ovetap
Anchor 6"x6" min. Trench and staple at 12" intervals
Staple Overlaps Max. 5' spacing
Bring material down to a level area, turn the end under 4" and staple at 12" intervals
NOTES:
1. Lime, fertilize and seed before installation. Planting of shrubs, trees, etc. should occur after installation.
2. Slope surface shall be smooth before placement for proper soil contact.
3. Design velocities exceeding 2 feet/second require temporary blankets, mats or similar liners to protect seed and soil until vegetation becomes established.
4. Terminal anchor trenches are required at RECP ends and intermittent check slots must be constructed across channels at 25-foot intervals.
5. Terminal anchor trenches should be a minimum of 12 inches in depth and 6 inches in width. Intermittent check slots should be 6 inches deep and 6 inches wide.
6. For installation on a slope, place RECP 2-3 feet over the top of the slope and into an excavated and trench measuring approximately 12 inches deep by 6 inches wide. Pin the RECP at 1 foot intervals along the bottom of the trench, backfill and compact. Unroll the RECP down the slope maintaining direct contact between the soil and RECP. Pin using staples or pins in a 3 feet center-to-center pattern.
7. 11 gauge, at least 6 inch by 1 inch staples or 12 inch minimum length wooden stakes are recommended for anchoring.
8. Grass-lined channels with design velocities exceeding 5 feet/second should include turf reinforcement mats
9. Check slots to be constructed per manufacturers specifications.
10. Filling or staking beyond per manufacturers specifications.
11. If there is a channel bend at the location of a check slot, anchor outside of the berm.
12. Stakes at intermittent check slots may be placed and driven to conform to any irregularities.
13. For slopes less than 3H:1V, rolls may be placed in horizontal stripe.

Overlap 6" Min.
Overcut channel 2" to allow bulking during seedbed preparation
Longitudinal Anchor Trench
Design Depth
Typical installation of intermittent check slot at termination of turf reinforcement mats
4" Min.
Intermittent check slot
Longitudinal anchor trench
Single-lap spliced ends or begin new roll in an intermittent check slot
Prepares soil and apply seed before installing blankets, mats or other temporary channel liner systems
FLOW
MAINTENANCE:
1. Inspect Rolled Erosion Control Products at least weekly and after each rain (1 inch or greater; repair immediately.
2. Good contact with the ground must be maintained, and erosion must not occur beneath the RECP.
3. Any areas of the RECP that are damaged or not in close contact with the ground shall be repaired and stapled.
4. If erosion occurs due to poorly controlled drainage, the problem shall be fixed and the eroded area protected
5. Monitor and repair the RECP as necessary until ground cover is established

NORTH CAROLINA Environmental Quality — DIVISION OF WATER RESOURCES

ROLLED EROSION CONTROL PRODUCTS (RECP)

6 EMBARKMENT MATTING — NTS
SECTION

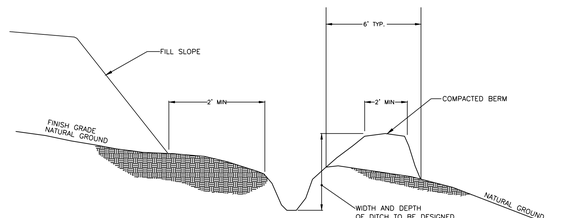


CONSTRUCTION SPECIFICATIONS
1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE ON THE BOTTOM ROW TO ALLOW POOL DRAINAGE. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCH BELOW THE CREST OF THE STORM DRAIN. PLACE THE BOTTOM ROW OF THE BLOCK AGAINST THE EDGE OF THE STORM DRAIN FOR LATERAL SUPPORT AND TO AVOID WASHOUTS WHEN OVERFLOW OCCURS. IF NEEDED, GIVE LATERAL SUPPORT TO SUBSEQUENT ROWS BY PLACING 2x4 WOOD STUDS THROUGH BLOCK OPENINGS. CAREFULLY FIT HARDWARE CLOTH OR COMPARABLE
2. WIRE MESH WITH 1/2-INCH OPENING OVER ALL BLOCK OPENING TO HOLD GRAVEL IN PLACE.
3. USE CLEAN GRAVEL,3/4-TO 1/2-INCH IN DIAMETER, PLACED 2 INCHES BELOW THE TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER AND SMOOTH IT TO AN EVEN GRADE. DOT #57 WASHED STONE IS RECOMMENDED

MAINTENANCE NOTES
INSPECT THE BARRIER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL AND MAKE REPAIRS AS NEEDED.
REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS.
WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL, AND EITHER SALVAGE OR DISPOSE OF IT PROPERLY.
BRING THE DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT IT. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

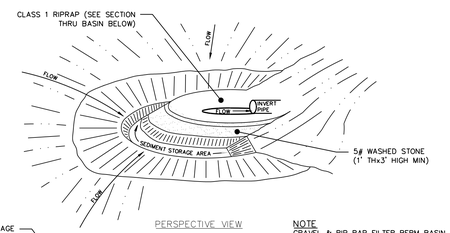
SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY FLOWS ARE EXPECTED AND WHERE OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE.

7 BLOCK & GRAVEL STONE INLET PROTECTION — NTS
SECTION



NOTE:
1. DITCH SHOULD HAVE LONGITUDINAL SLOPE OF 1%.

8 TEMPORARY DIVERSION DITCH — NTS
SECTION

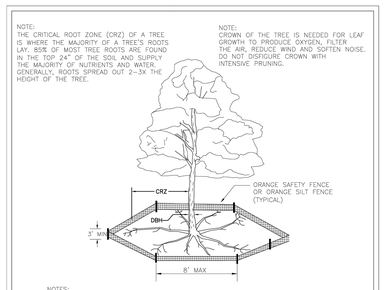


NOTE
GRAVEL & RIP RAP FILTER BERM BASIN DETAIL IS DESIGNED TO PROTECT EXISTING PIPE INVERTS THAT DRAIN 10 ACRES OR LESS.

NOTE
DIMENSIONS ARE MINIMUM ACCEPTABLE UNLESS OTHERWISE NOTED.

X SECTION THROUGH BASIN, FILTER AND CULVERT PIPE

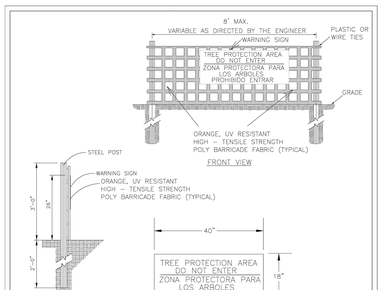
9 HORSESHOE INLET PROTECTION — NTS
SECTION



NOTES:
1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR SHALL REPAIR DAMAGE TO TREES.
6. FAILING TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF $500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

STANDARD DETAIL		
DATE: JAN, 2015	TREE PROTECTION DURING CONSTRUCTION SHEET 1 of 2	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
DRAWN BY JSR		
CHECKED BY RDG, P.E.		
SCALE NOT TO SCALE		SD 15-09

10 TREE PROTECTION — NTS
SECTION



NOTES:
1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

STANDARD DETAIL		
DATE: JAN, 2015	TREE PROTECTION DURING CONSTRUCTION SHEET 2 of 2	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
DRAWN BY JSR		
CHECKED BY RDG, P.E.		
SCALE NOT TO SCALE		SD 15-09

11 TREE PROTECTION — NTS
SECTION

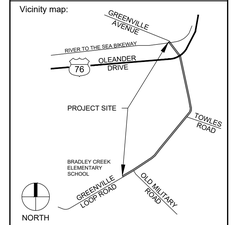
12 DETAIL NOT IN USE — NTS
SECTION

STEWART
101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21014

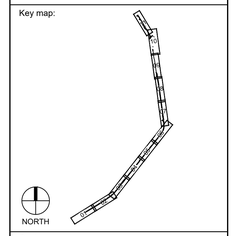
Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



Key map:



Seal:

NORTH CAROLINA PROFESSIONAL SEAL 022753 ENGINEER CLIFFORD N. NELSON

SCALE: AS NOTED

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
----	----	----

Title:

EROSION CONTROL DETAILS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: SI
Approved by: CN
Sheet #: L4.90

\\stewart-eng.local\stewart\PD\Projects\2021\21014 - greenville loop trail section 3\DWGS\3-CD\3-Sheets\L21014-L4.90 Erosion Control Details.dwg Apr 09, 2025 - 3:19pm

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION A: SELF-INSPECTION

Self-inspections are required during normal business hours in accordance with the table below. When adverse weather or site conditions would cause the safety of the inspection personnel to be in jeopardy, the inspection may be delayed until the next business day on which it is safe to perform the inspection. In addition, when a storm event of equal to or greater than 1.0 inch occurs outside of normal business hours, the self-inspection shall be performed upon the commencement of the next business day. Any time when inspections were delayed shall be noted in the Inspection Record.

Inspect	Frequency (during normal business hours)	Inspection records must include:
(1) Rain gauge maintained in good working order	Daily	Daily rainfall amounts. If no daily rain gauge observations are made during weekend or holiday periods, and no individual-day rainfall information is available, record the cumulative rain measurement for those un-attended days (one this will determine if a site inspection is needed). Days on which no rainfall occurred shall be recorded as "zero." The permittee may use another rain-monitoring device approved by the Division.
(2) E&SC Measures	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the measures inspected. 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Indication of whether the measures were operating properly, 5. Description of maintenance needs for the measure, 6. Description, evidence, and date of corrective actions taken.
(3) Stormwater discharge outfalls (SDOs)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	1. Identification of the discharge outfalls inspected, 2. Date and time of the inspection, 3. Name of the person performing the inspection, 4. Evidence of indicators of stormwater pollution such as oil sheen, floating or suspended solids or discoloration, 5. Indication of visible sediment leaving the site, 6. Description, evidence, and date of corrective actions taken.
(4) Perimeter of site	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If visible sedimentation is found outside site limits, then a record of the following shall be made: 1. Actions taken to clean up or stabilize the sediment that has left the site limits, 2. Description, evidence, and date of corrective actions taken, and 3. An explanation as to the actions taken to control future releases.
(5) Streams or wetlands onsite or offsite (where accessible)	At least once per 7 calendar days and within 24 hours of a rain event ≥ 1.0 inch in 24 hours	If the stream or wetland has increased visible sedimentation or a stream has visible increased turbidity from the construction activity, then a record of the following shall be made: 1. Description, evidence and date of corrective actions taken, and 2. Records of the required reports to the appropriate Division Regional Office per Part III, Section C, Item (2)(a) of this permit.
(6) Ground stabilization measures	After each phase of grading	1. The phase of grading (installation of perimeter E&SC measures, clearing and grubbing, installation of storm drainage facilities, completion of all land-disturbing activity, construction or redevelopment, permanent ground cover). 2. Documentation that the required ground stabilization measures have been provided within the required timeframes or an assurance that they will be provided as soon as possible

NOTE: The rain inspection resets the required 7 calendar day inspection requirement.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION B: RECORDKEEPING

1. E&SC Plan Documentation

The approved E&SC plan as well as any approved deviation shall be kept on the site. The approved E&SC plan must be kept up-to-date throughout the coverage under this permit. The following items pertaining to the E&SC plan shall be kept on site and available for inspection at all times during normal business hours.

Item to Document	Documentation Requirements
(a) Each E&SC measure has been installed and does not significantly deviate from the locations, dimensions and relative elevations shown on the approved E&SC plan.	Initial and date each E&SC measure on a copy of the approved E&SC plan or complete, date and sign an inspection report that lists each E&SC measure shown on the approved E&SC plan. This documentation is required upon the initial installation of the E&SC measures or if the E&SC measures are modified after initial installation.
(b) A phase of grading has been completed.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate completion of the construction phase.
(c) Ground cover is located and installed in accordance with the approved E&SC plan.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate compliance with approved ground cover specifications.
(d) The maintenance and repair requirements for all E&SC measures have been performed.	Complete, date and sign an inspection report.
(e) Corrective actions have been taken to E&SC measures.	Initial and date a copy of the approved E&SC plan or complete, date and sign an inspection report to indicate the completion of the corrective action.

2. Additional Documentation to be Kept on Site

In addition to the E&SC plan documents above, the following items shall be kept on the site and available for inspectors at all times during normal business hours, unless the Division provides a site-specific exemption based on unique site conditions that make this requirement not practical:

(a) This General Permit as well as the Certificate of Coverage, after it is received.

(b) Records of inspections made during the previous twelve months. The permittee shall record the required observations on the Inspection Record Form provided by the Division or a similar inspection form that includes all the required elements. Use of electronically-available records in lieu of the required paper copies will be allowed if shown to provide equal access and utility as the hard-copy records.

3. Documentation to be Retained for Three Years

All data used to complete the e-NOI and all inspection records shall be maintained for a period of three years after project completion and made available upon request. [40 CFR 122.41]

PART II, SECTION G, ITEM (4)
DRAW DOWN OF SEDIMENT BASINS FOR MAINTENANCE OR CLOSE OUT

Sediment basins and traps that receive runoff from drainage areas of one acre or more shall use outlet structures that withdraw water from the surface when these devices need to be drawn down for maintenance or close out unless this is infeasible. The circumstances in which it is not feasible to withdraw water from the surface shall be rare (for example, times with extended cold weather). Non-surface withdrawals from sediment basins shall be allowed only when all of the following criteria have been met:

(a) The E&SC plan authority has been provided with documentation of the non-surface withdrawal and the specific time periods or conditions in which it will occur. The non-surface withdrawal shall not commence until the E&SC plan authority has approved these items,
(b) The non-surface withdrawal has been reported as an anticipated bypass in accordance with Part III, Section C, Item (2)(c) and (d) of this permit,
(c) Dewatering discharges are treated with controls to minimize discharges of pollutants from stormwater that is removed from the sediment basin. Examples of appropriate controls include properly sited, designed and maintained dewatering tanks, weir tanks, and filtration systems,
(d) Vegetated, upland areas of the sites or a properly designed stone pad is used to the extent feasible at the outlet of the dewatering treatment devices described in Item (c) above,
(e) Velocity dissipation devices such as check dams, sediment traps, and riprap are provided at the discharge points of all dewatering devices, and
(f) Sediment removed from the dewatering treatment devices described in Item (c) above is disposed of in a manner that does not cause deposition of sediment into waters of the United States.

PART III
SELF-INSPECTION, RECORDKEEPING AND REPORTING

SECTION C: REPORTING

1. Occurrences that Must be Reported

Permittees shall report the following occurrences:

(a) Visible sediment deposition in a stream or wetland.

(b) Oil spills if:
- They are 25 gallons or more,
- They are less than 25 gallons but cannot be cleaned up within 24 hours,
- They cause sheen on surface waters (regardless of volume), or
- They are within 100 feet of surface waters (regardless of volume).

(c) Releases of hazardous substances in excess of reportable quantities under Section 311 of the Clean Water Act (Ref: 40 CFR 110.3 and 40 CFR 117.3) or Section 102 of CERCLA (Ref: 40 CFR 302.4) or G.S. 143-215.85.

(d) Anticipated bypasses and unanticipated bypasses.

(e) Noncompliance with the conditions of this permit that may endanger health or the environment.

2. Reporting Timeframes and Other Requirements

After a permittee becomes aware of an occurrence that must be reported, he shall contact the appropriate Division regional office within the timeframes and in accordance with the other requirements listed below. Occurrences outside normal business hours may also be reported to the Department's Environmental Emergency Center personnel at (800) 858-0368.

Occurrence	Reporting Timeframes (After Discovery) and Other Requirements
(a) Visible sediment deposition in a stream or wetland	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days***, a report that contains a description of the sediment and actions taken to address the cause of the deposition. Division staff may waive the requirement for a written report on a case-by-case basis. • If the stream is named on the NC 303(d) list as impaired for sediment-related causes, the permittee may be required to perform additional monitoring, inspections or apply more stringent practices if staff determine that additional requirements are needed to assure compliance with the federal or state impaired-waters conditions.
(b) Oil spills and release of hazardous substances per Item 1(b)-(c) above	• ***Within 24 hours***, an oral or electronic notification. The notification shall include information about the date, time, nature, volume and location of the spill or release.
(c) Anticipated bypasses [40 CFR 122.41(m)(3)]	• ***A report at least ten days before the date of the bypass, if possible.*** The report shall include an evaluation of the anticipated quality and effect of the bypass.
(d) Unanticipated bypasses [40 CFR 122.41(m)(3)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that includes an evaluation of the quality and effect of the bypass.
(e) Noncompliance with the conditions of this permit that may endanger health or the environment[40 CFR 122.41(l)(7)]	• ***Within 24 hours***, an oral or electronic notification. • ***Within 7 calendar days,*** a report that contains a description of the noncompliance, and its causes; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time noncompliance is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6)]. Division staff may waive the requirement for a written report on a case-by-case basis.

NORTH CAROLINA Environmental Quality

NCG01 SELF-INSPECTION, RECORDKEEPING AND REPORTING

EFFECTIVE: 04/01/19

GROUND STABILIZATION AND MATERIALS HANDLING PRACTICES FOR COMPLIANCE WITH THE NCG01 CONSTRUCTION GENERAL PERMIT

Implementing the details and specifications on this plan sheet will result in the construction activity being considered compliant with the Ground Stabilization and Materials Handling sections of the NCG01 Construction General Permit (Sections E and F, respectively). The permittee shall comply with the Erosion and Sediment Control plan approved by the delegated authority having jurisdiction. All details and specifications shown on this sheet may not apply depending on site conditions and the delegated authority having jurisdiction.

SECTION E: GROUND STABILIZATION

Site Area Description	Required Ground Stabilization Timeframes: Stabilize within this many calendar days after ceasing land disturbance	Timeframe variations
(a) Perimeter dikes, swales, ditches, and perimeter slopes	7	None
(b) High Quality Water (HQW) Zones	7	None
(c) Slopes steeper than 3:1	7	If slopes are 10' or less in length and are not steeper than 2:1, 14 days are allowed
(d) Slopes 3:1 to 4:1	14	-7 days for slopes greater than 50' in length and with slopes steeper than 4:1 -7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed
(e) Areas with slopes flatter than 4:1	14	-7 days for perimeter dikes, swales, ditches, perimeter slopes and HQW Zones -10 days for Falls Lake Watershed unless there is zero slope

Note: After the permanent cessation of construction activities, any areas with temporary ground stabilization shall be converted to permanent ground stabilization as soon as practicable but in no case longer than 90 calendar days after the last land disturbing activity. Temporary ground stabilization shall be maintained in a manner to render the surface stable against accelerated erosion until permanent ground stabilization is achieved.

GROUND STABILIZATION SPECIFICATION

Stabilize the ground sufficiently so that rain will not dislodge the soil. Use one of the techniques in the table below:

Temporary Stabilization	Permanent Stabilization
• Temporary grass seed covered with straw or other mulches and tackifiers • Hydroseeding • Rolled erosion control products with or without temporary grass seed • Appropriately applied straw or other mulch • Plastic sheeting	• Permanent grass seed covered with straw or other mulches and tackifiers • Geotextile fabrics such as permanent soil reinforcement matting • Hydroseeding • Shrubs or other permanent plantings covered with mulch • Uniform and evenly distributed ground cover sufficient to restrain erosion • Structural methods such as concrete, asphalt or retaining walls • Rolled erosion control products with grass seed

POLYACRYLAMIDES (PAMS) AND FLOCCULANTS

1. Select flocculants that are appropriate for the soils being exposed during construction, selecting from the *NC DWR List of Approved PAMS/Flocculants*.
2. Apply flocculants at or before the inlets to Erosion and Sediment Control Measures.
3. Apply flocculants at the concentrations specified in the *NC DWR List of Approved PAMS/Flocculants* and in accordance with the manufacturer's instructions.
4. Provide ponding area for containment of treated Stormwater before discharging offsite.
5. Store flocculants in leak-proof containers that are kept under storm-resistant cover or surrounded by secondary containment structures.

EQUIPMENT AND VEHICLE MAINTENANCE

1. Maintain vehicles and equipment to prevent discharge of fluids.
2. Provide drip pans under any stored equipment.
3. Identify leaks and repair as soon as feasible, or remove leaking equipment from the project.
4. Collect all spent fluids, store in separate containers and properly dispose as hazardous waste (recycle when possible).
5. Remove leaking vehicles and construction equipment from service until the problem has been corrected.
6. Bring used fuels, lubricants, coolants, hydraulic fluids and other petroleum products to a recycling or disposal center that handles these materials.

LITTER, BUILDING MATERIAL AND LAND CLEARING WASTE

1. Never bury or burn waste. Place litter and debris in approved waste containers.
2. Provide a sufficient number and size of waste containers (e.g dumpster, trash receptacle) on site to contain construction and domestic wastes.
3. Locate waste containers at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
4. Locate waste containers on areas that do not receive substantial amounts of runoff from upland areas and does not drain directly to a storm drain, stream or wetland.
5. Cover waste containers at the end of each workday and before storm events or provide secondary containment. Repair or replace damaged waste containers.
6. Anchor all lightweight items in waste containers during times of high winds.
7. Empty waste containers as needed to prevent overflow. Clean up immediately if containers overflow.
8. Dispose waste off-site at an approved disposal facility.
9. On business days, clean up and dispose of waste in designated waste containers.

PAINT AND OTHER LIQUID WASTE

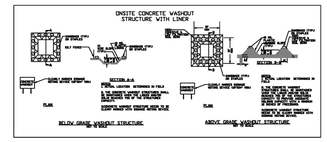
1. Do not dump paint and other liquid waste into storm drains, streams or wetlands.
2. Locate paint washouts at least 50 feet away from storm drain inlets and surface waters unless no other alternatives are reasonably available.
3. Contain liquid wastes in a controlled area.
4. Containment must be labeled, sized and placed appropriately for the needs of site.
5. Prevent the discharge of soaps, solvents, detergents and other liquid wastes from construction sites.

PORTABLE TOILETS

1. Install portable toilets on level ground, at least 50 feet away from storm drains, streams or wetlands unless there is no alternative reasonably available. If 50 foot offset is not attainable, provide relocation of portable toilet behind silt fence or place on a gravel pad and surround with sand bags.
2. Provide staking or anchoring of portable toilets during periods of high winds or in high foot traffic areas.
3. Monitor portable toilets for leaking and properly dispose of any leaked material. Utilize a licensed sanitary waste hauler to remove leaking portable toilets and replace with properly operating unit.

EARTHEN STOCKPILE MANAGEMENT

1. Show stockpile locations on plans. Locate earthen-material stockpile areas at least 50 feet away from storm drain inlets, sediment basins, perimeter sediment controls and surface waters unless it can be shown no other alternatives are reasonably available.
2. Protect stockpile with silt fence installed along toe of slope with a minimum offset of five feet from the toe of stockpile.
3. Provide stable stone access point when feasible.
4. Stabilize stockpile within the timeframes provided on this sheet and in accordance with the approved plan and any additional requirements. Soil stabilization is defined as vegetative, physical or chemical coverage techniques that will restrain accelerated erosion on disturbed soils for temporary or permanent control needs.



CONCRETE WASHOUTS

1. Do not discharge concrete or cement slurry from the site.
2. Dispose of, or recycle settled, hardened concrete residue in accordance with local and state solid waste regulations and at an approved facility.
3. Manage washout from mortar mixers in accordance with the above item and in addition place the mixer and associated materials on impervious barrier and within lot perimeter silt fence.
4. Install temporary concrete washouts per local requirements, where applicable. If an alternate method or product is to be used, contact your approval authority for review and approval. If local standard details are not available, use one of the two types of temporary concrete washouts provided on this detail.
5. Do not use concrete washouts for dewatering or storing defective curb or sidewalk sections. Stormwater accumulated within the washout may not be pumped into or discharged to the storm drain system or receiving surface waters. Liquid waste must be pumped out and removed from project.
6. Locate washouts at least 50 feet from storm drain inlets and surface waters unless it can be shown that no other alternatives are reasonably available. At a minimum, install protection of storm drain inlet(s) closest to the washout which could receive spills or overflow.
7. Locate washouts in an easily accessible area, on level ground and install a stone entrance pad in front of the washout. Additional controls may be required by the approving authority.
8. Install at least one sign directing concrete trucks to the washout within the project limits. Post signage on the washout itself to identify this location.
9. Remove leavings from the washout when at approximately 75% capacity to limit overflow events. Replace the tarp, sand bags or other temporary structural components when no longer functional. When utilizing alternative or proprietary products, follow manufacturer's instructions.
10. At the completion of the concrete work, remove remaining leavings and dispose of in an approved disposal facility. Fill pit, if applicable, and stabilize any disturbance caused by removal of washout.

HERBICIDES, PESTICIDES AND RODENTICIDES

1. Store and apply herbicides, pesticides and rodenticides in accordance with label restrictions.
2. Store herbicides, pesticides and rodenticides in their original containers with the label, which lists directions for use, ingredients and first aid steps in case of accidental poisoning.
3. Do not store herbicides, pesticides and rodenticides in areas where flooding is possible or where they may spill or leak into wells, stormwater drains, ground water or surface water. If a spill occurs, clean area immediately.
4. Do not stockpile these materials onsite.

HAZARDOUS AND TOXIC WASTE

1. Create designated hazardous waste collection areas on-site.
2. Place hazardous waste containers under cover or in secondary containment.
3. Do not store hazardous chemicals, drums or bagged materials directly on the ground.

NORTH CAROLINA Environmental Quality

NCG01 GROUND STABILIZATION AND MATERIALS HANDLING

EFFECTIVE: 04/01/19

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PROJECT #: L21014

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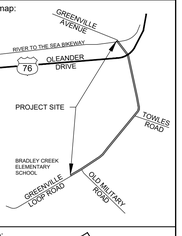
Vicinity map:



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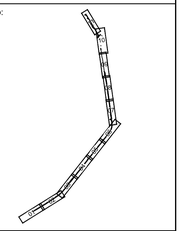

Seal:

SCALE: AS NOTED

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

EROSION CONTROL DETAILS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: SI
Approved by: CN
Sheet #: L4.91

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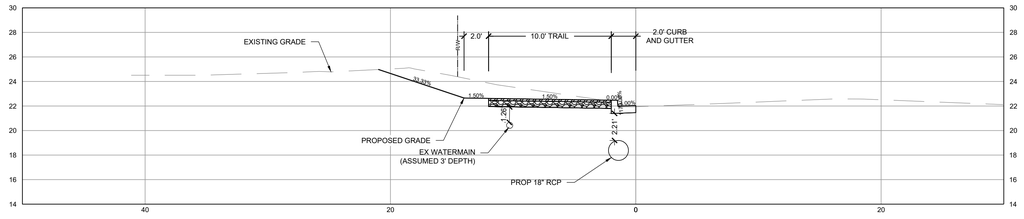

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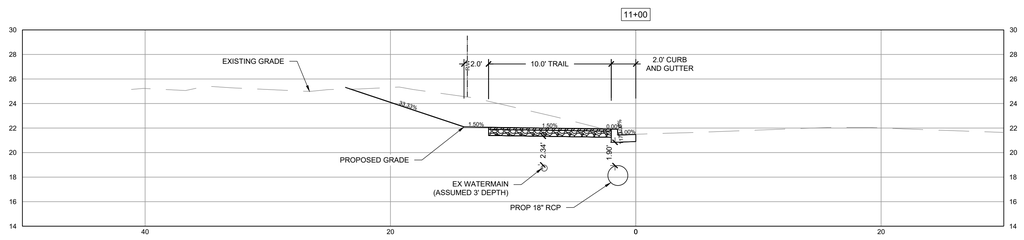

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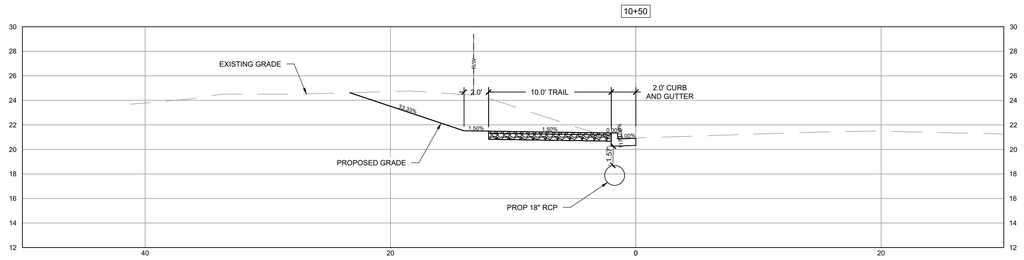

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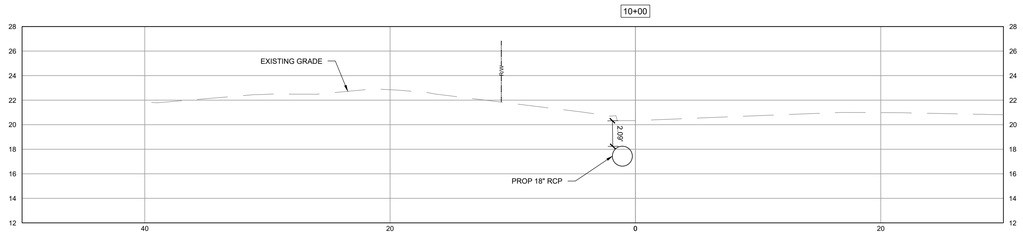

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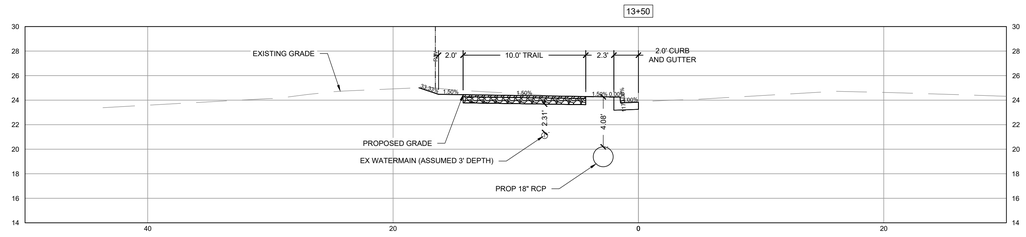

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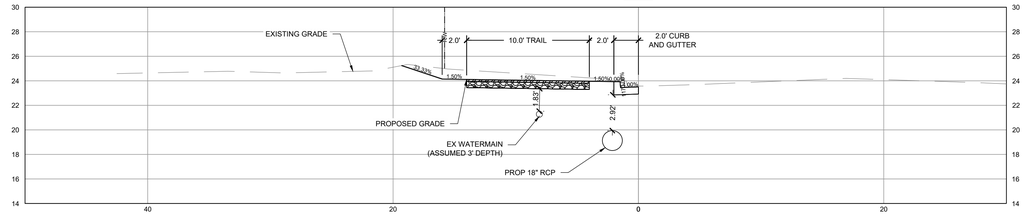

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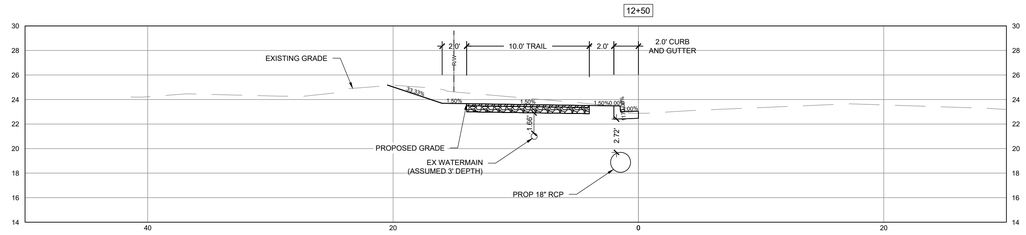

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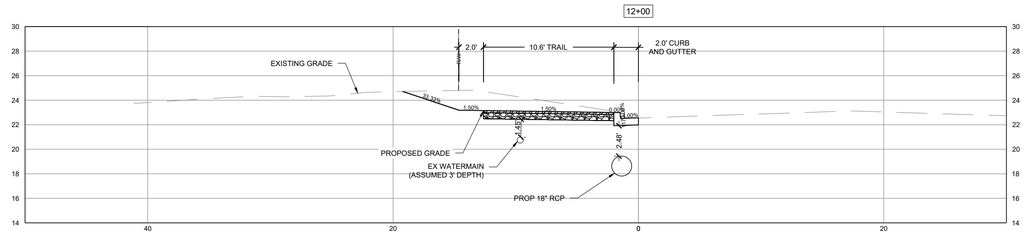

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FIRM LICENSE #: C-1051
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NORTH CAROLINA

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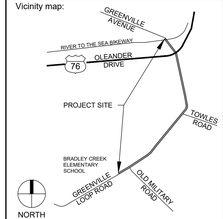
Vicinity map:



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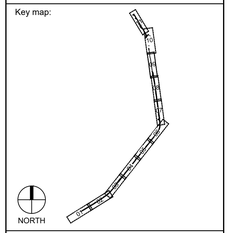

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Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO

Sheet #: L5.00

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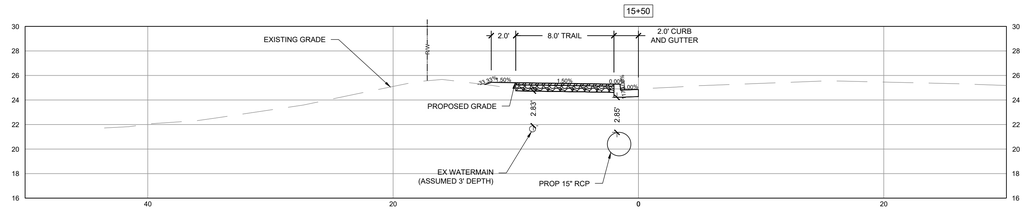

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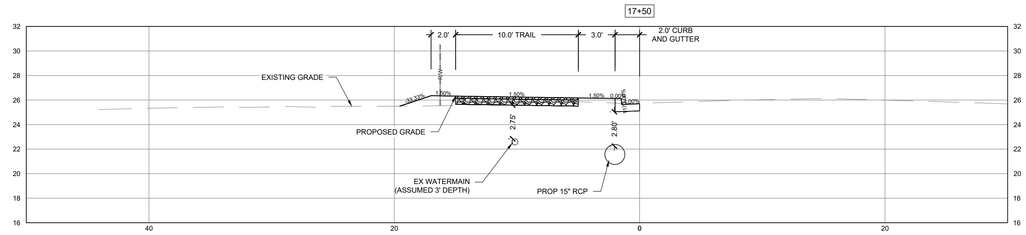

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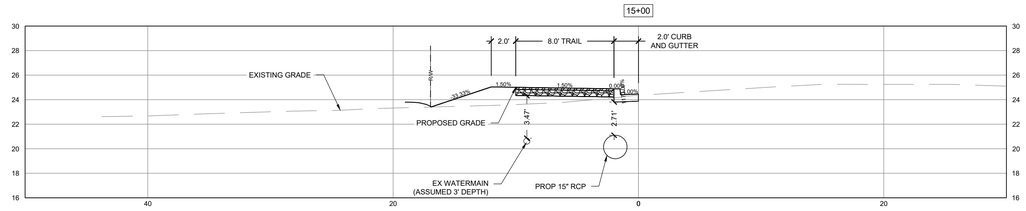

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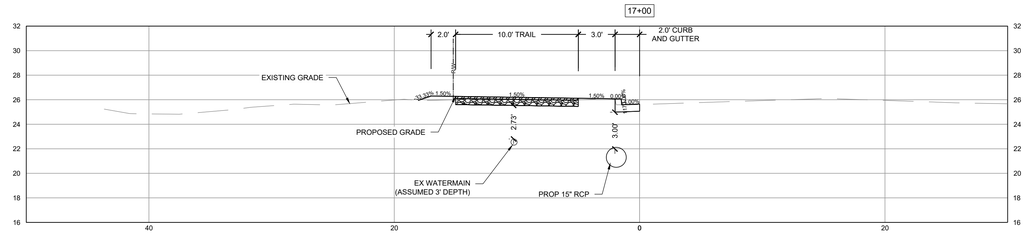

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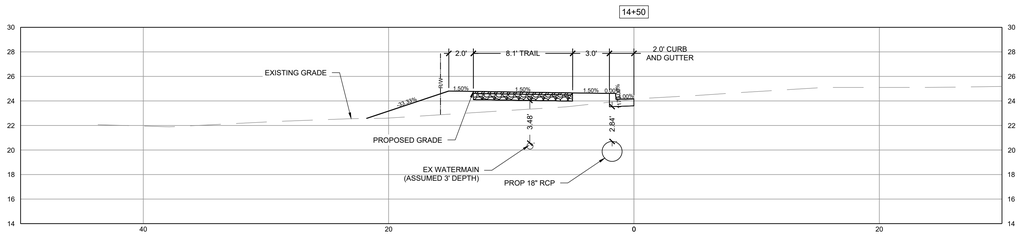

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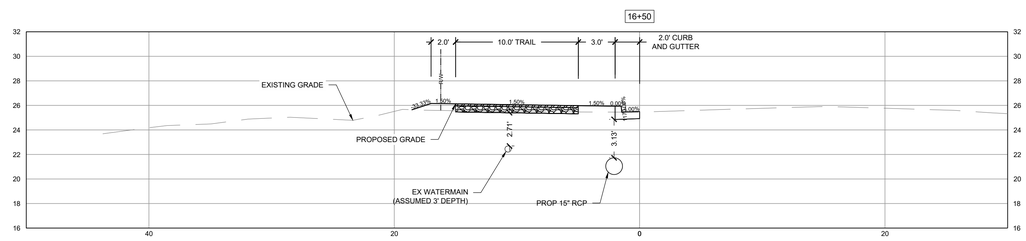

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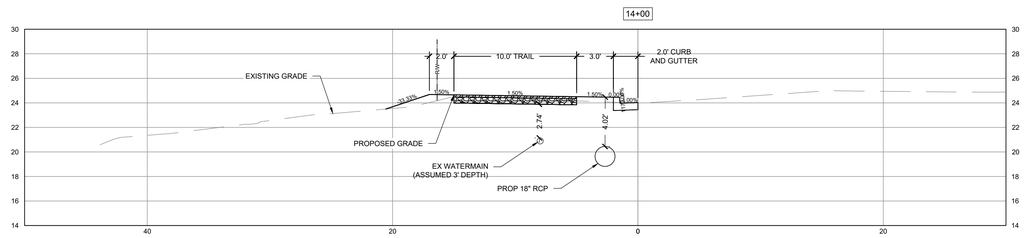

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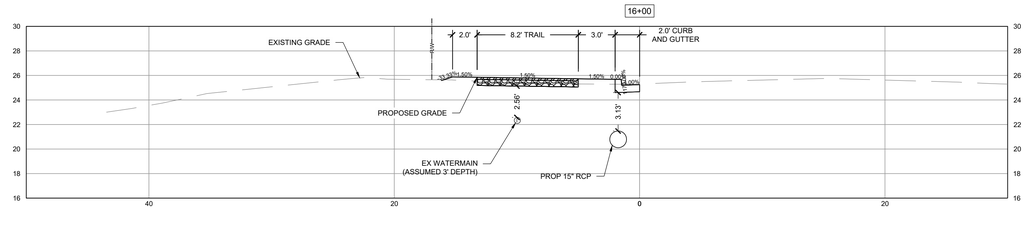

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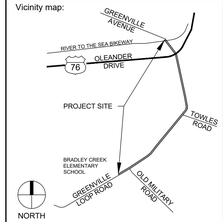
Vicinity map:



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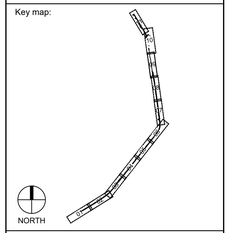

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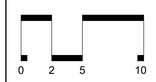

SCALE: 1" = 5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO
Sheet #: L5.01

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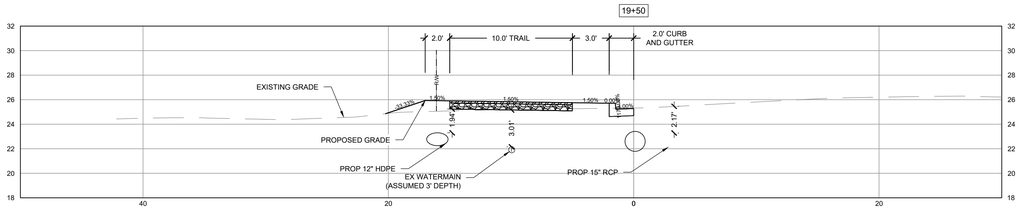

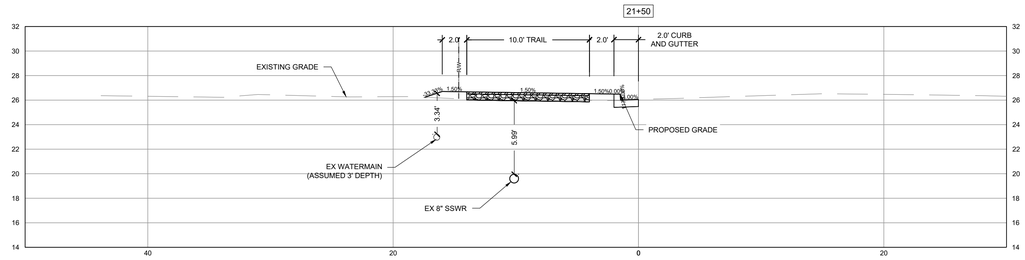

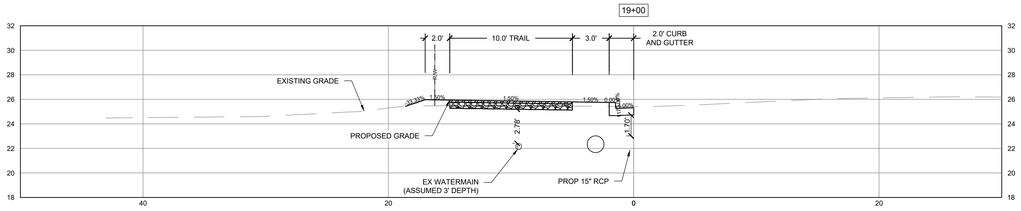

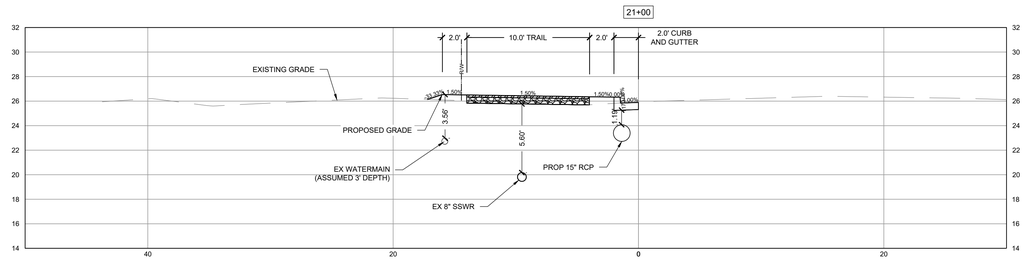

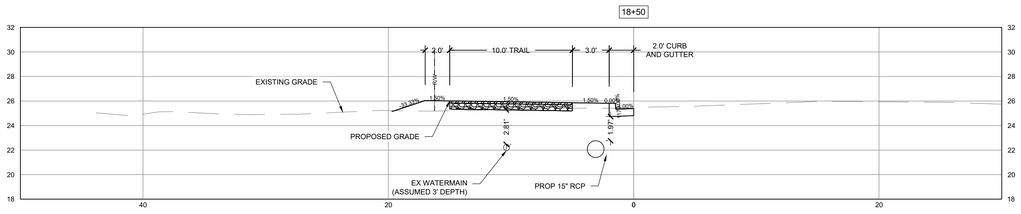

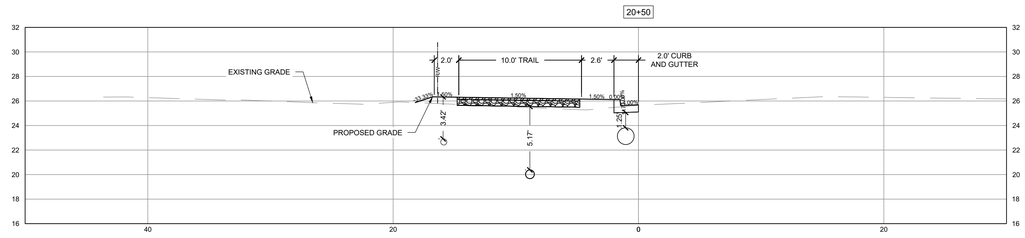

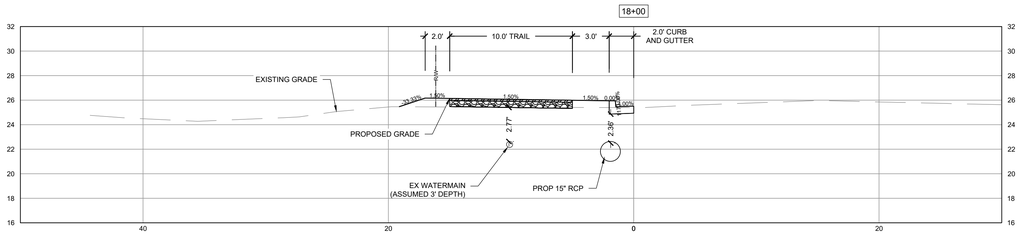

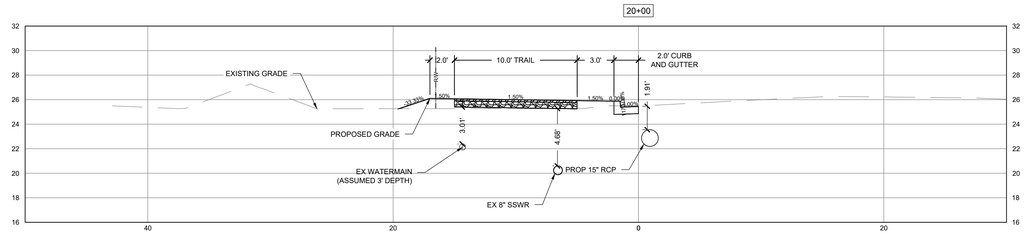

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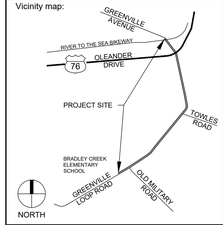
Vicinity map:



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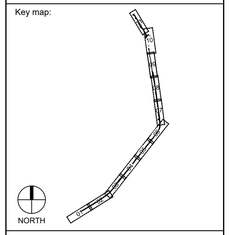

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT
1240
TODD A. DUNCAN
10.09.2023

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Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO

Sheet #: L5.02

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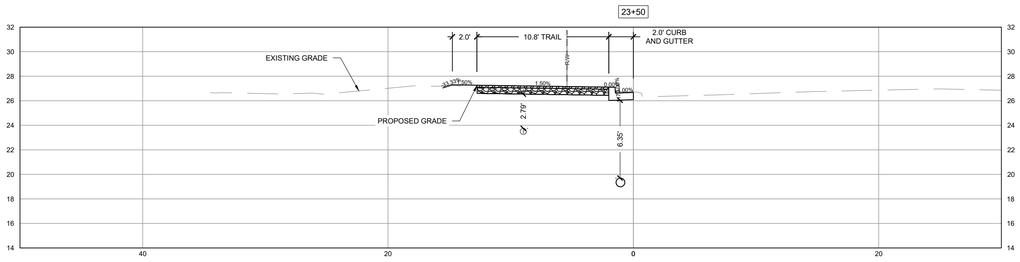

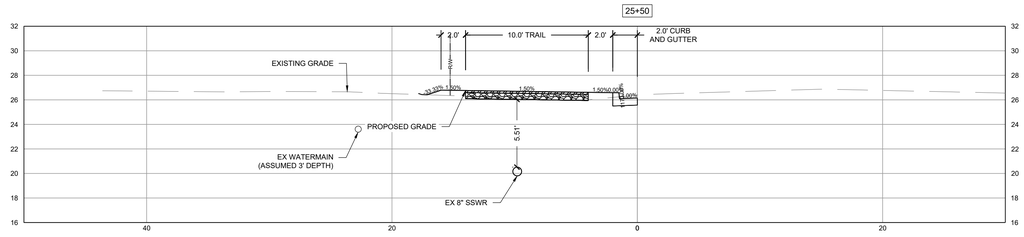

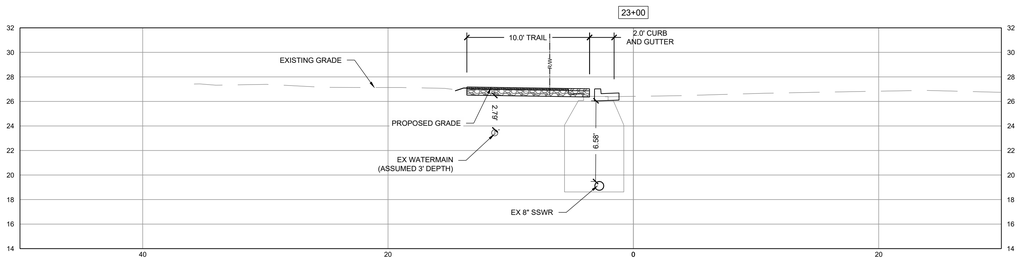

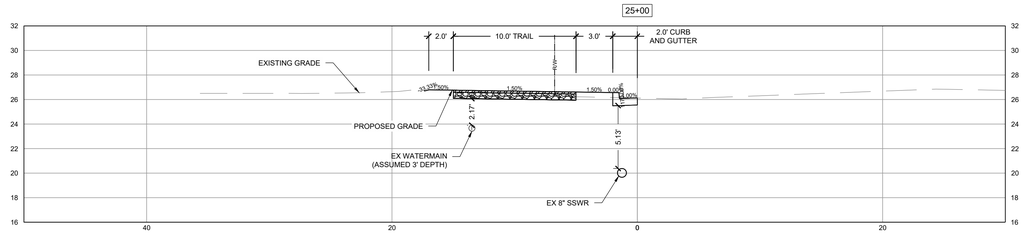

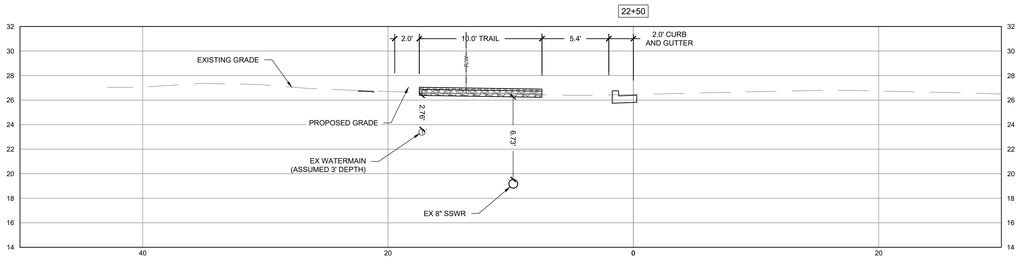

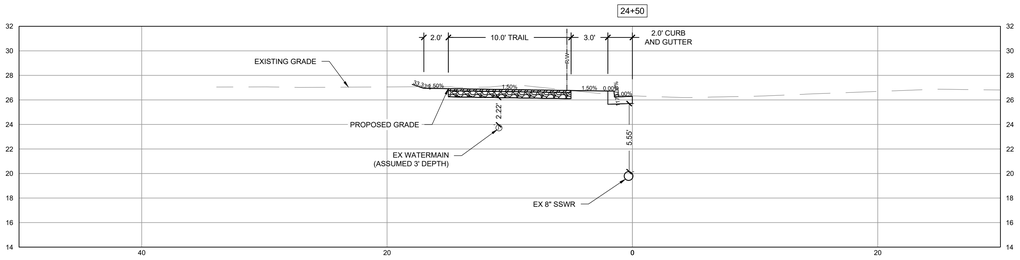

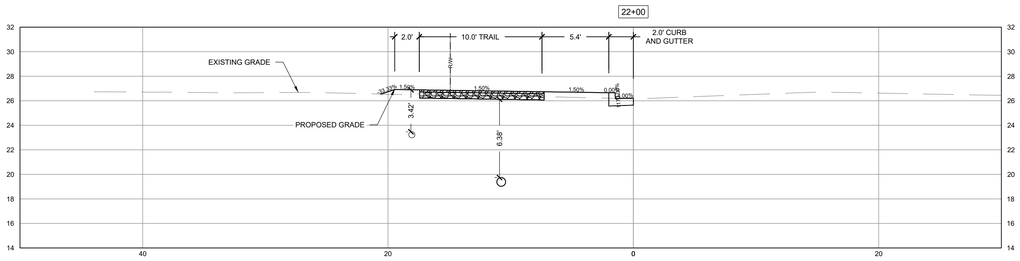

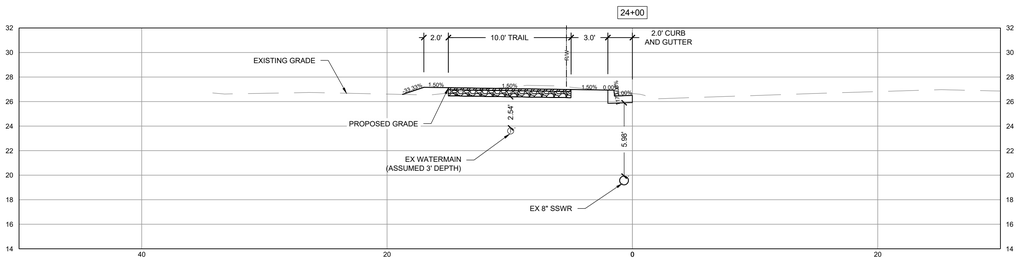

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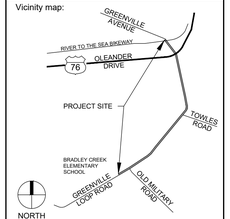
PROJECT #: L21014

Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



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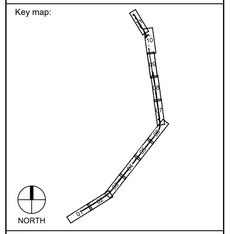

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NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN
10.09.2023

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SCALE: 1"=5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO
Sheet #: L5.03

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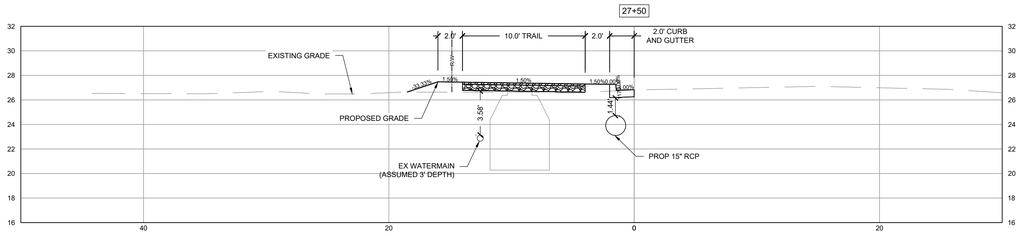

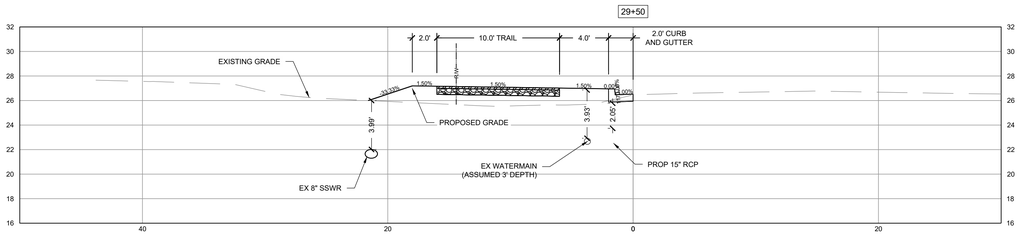

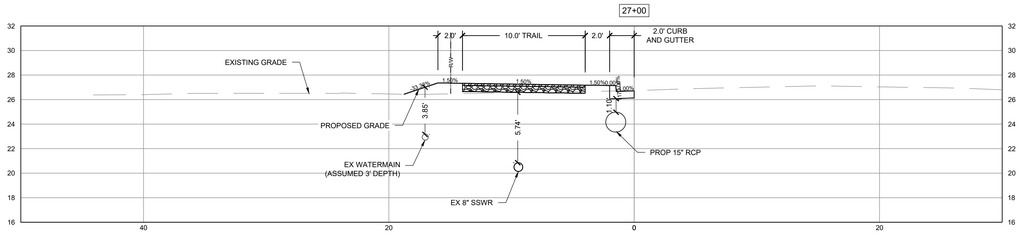

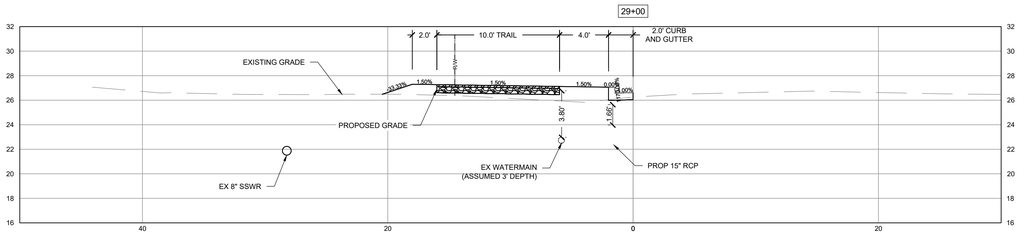

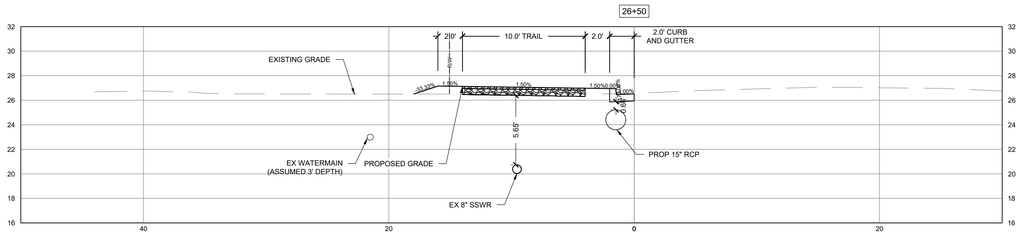

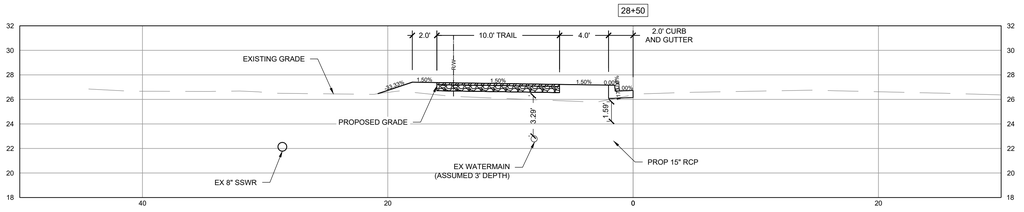

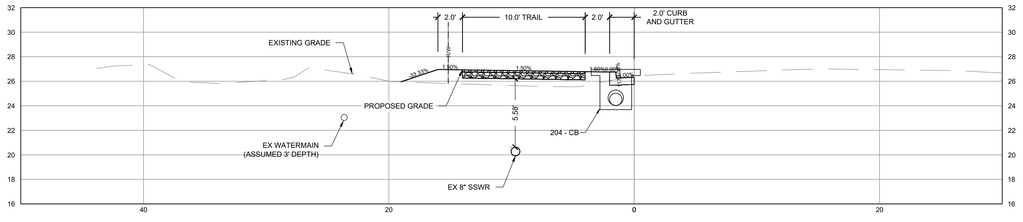

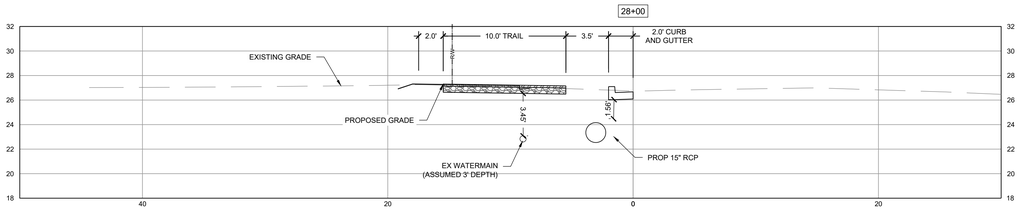

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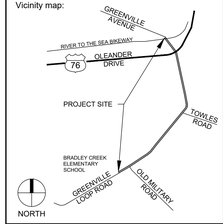
PROJECT #: L21014

Client:

CITY OF WILMINGTON
NORTH CAROLINA

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



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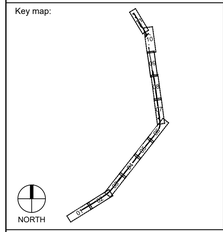

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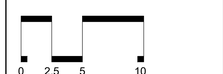

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO
Sheet #: L5.04

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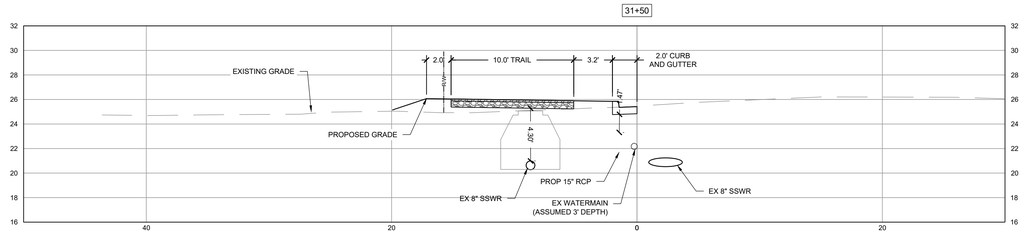

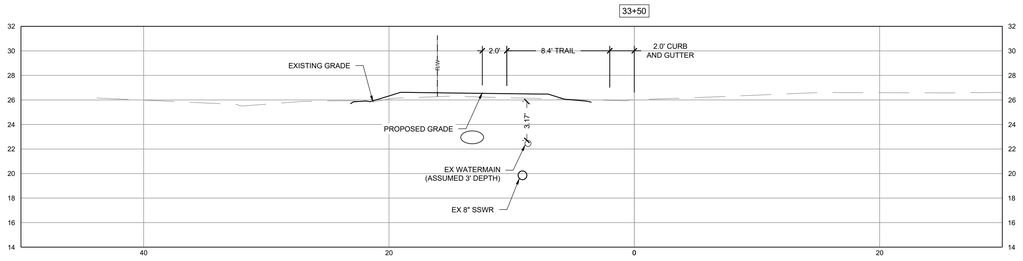

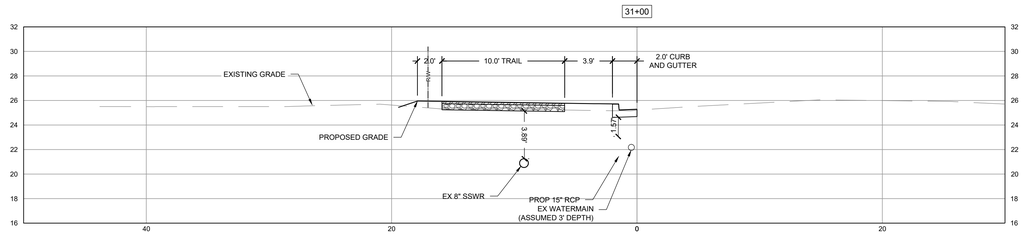

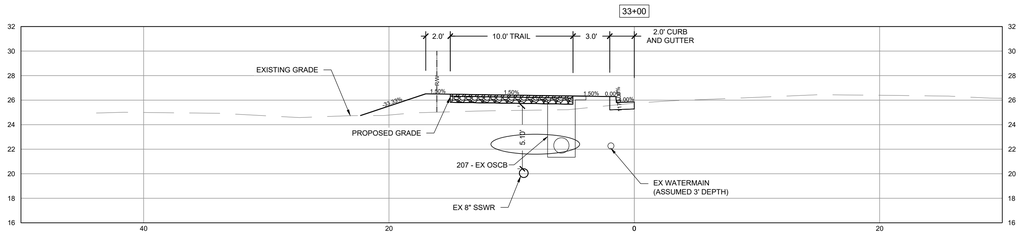

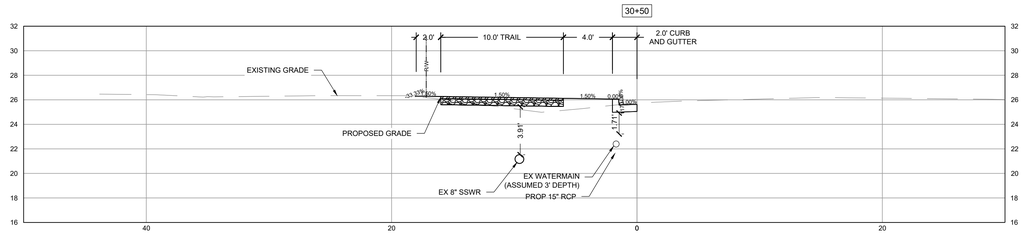

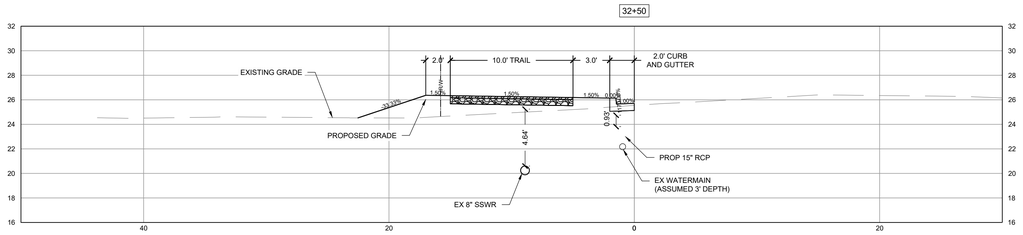

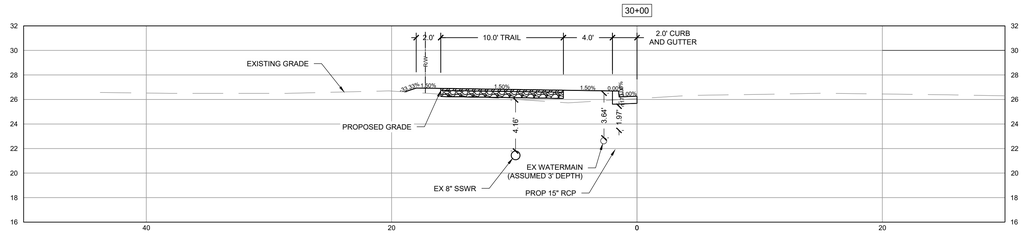

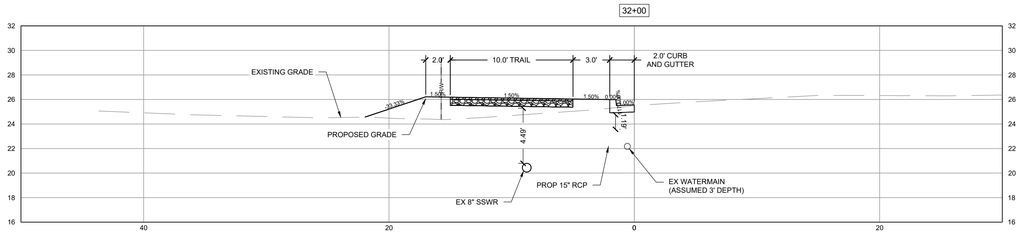

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PROJECT #: L21014

Client:

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NORTH CAROLINA

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
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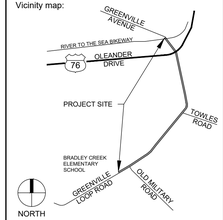
Vicinity map:



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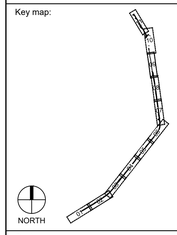

Seal:

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SCALE: 1"=5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO
Sheet #: L5.05

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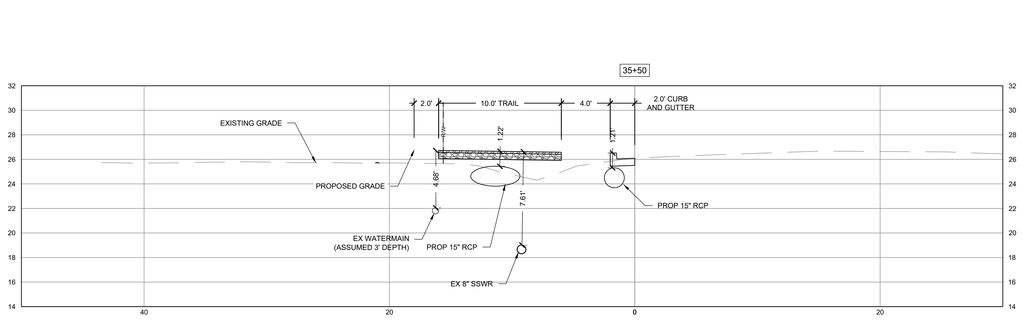

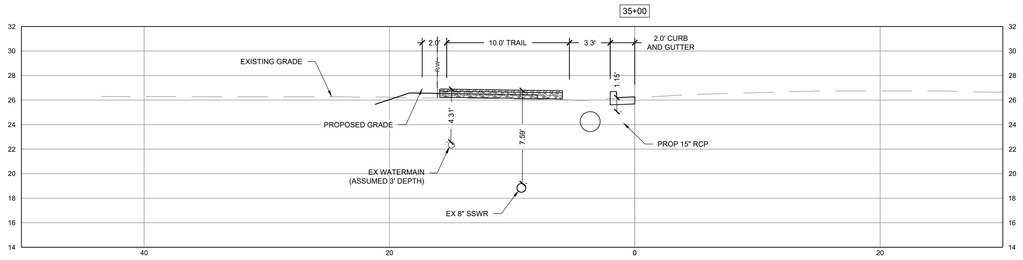

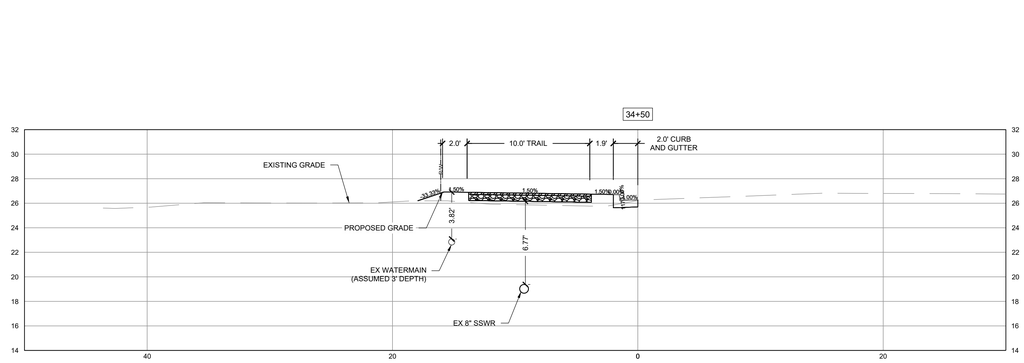

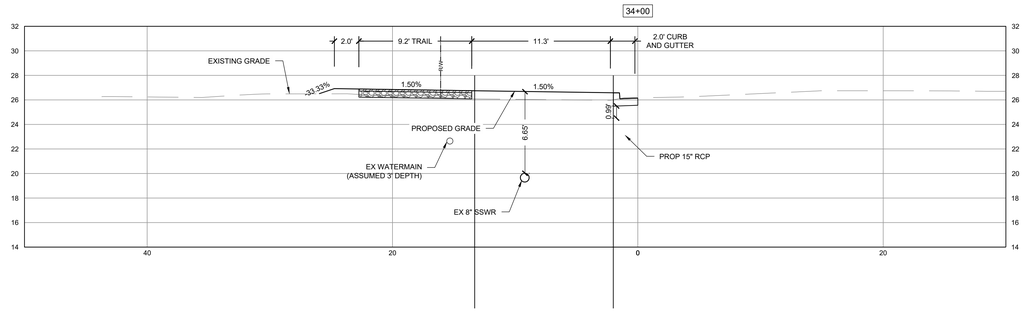

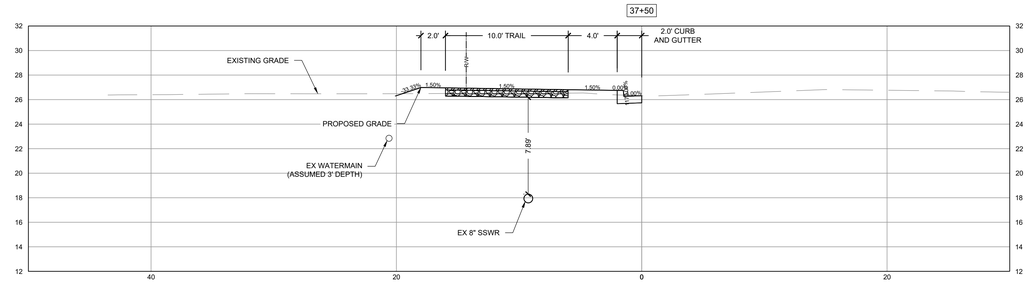

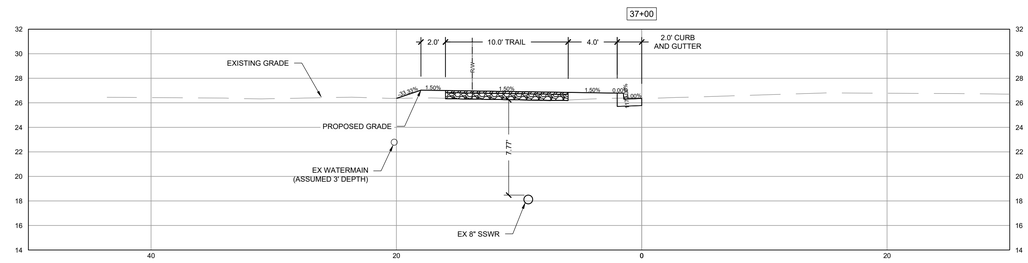

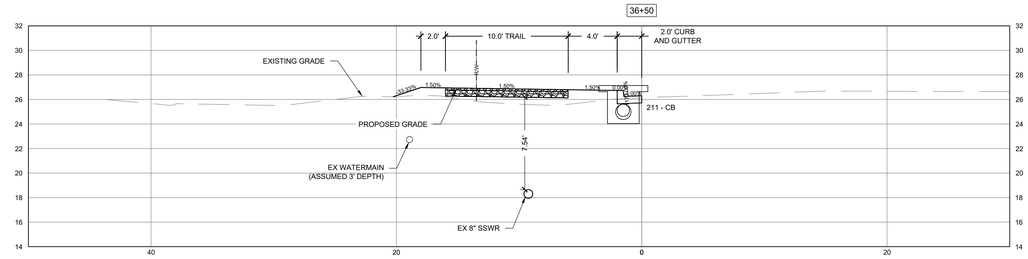

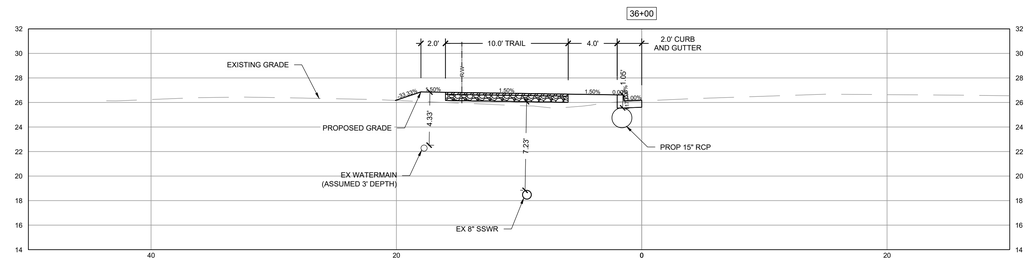

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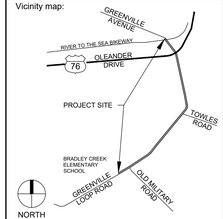
Vicinity map:



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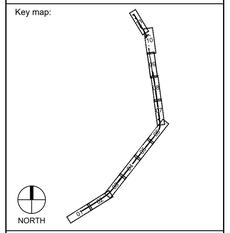

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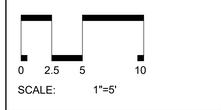

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO
Sheet #: L5.06

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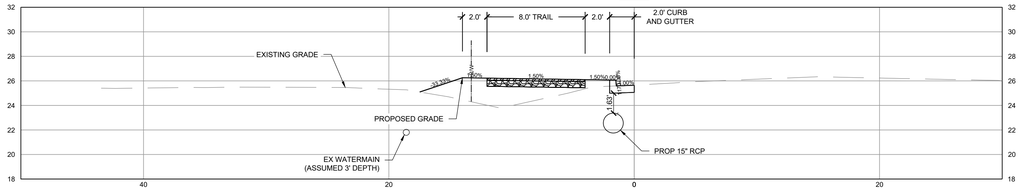

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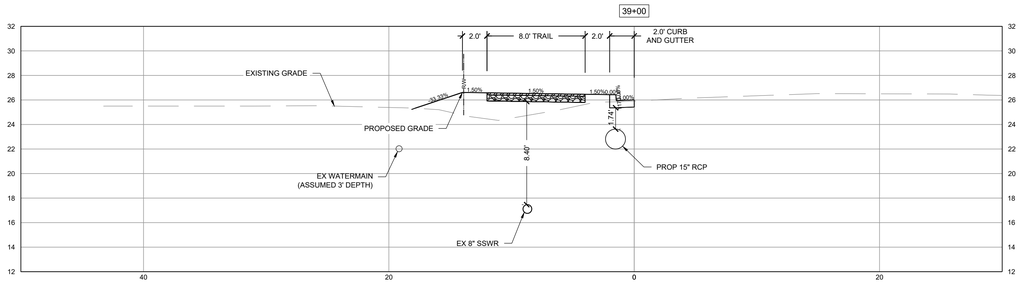

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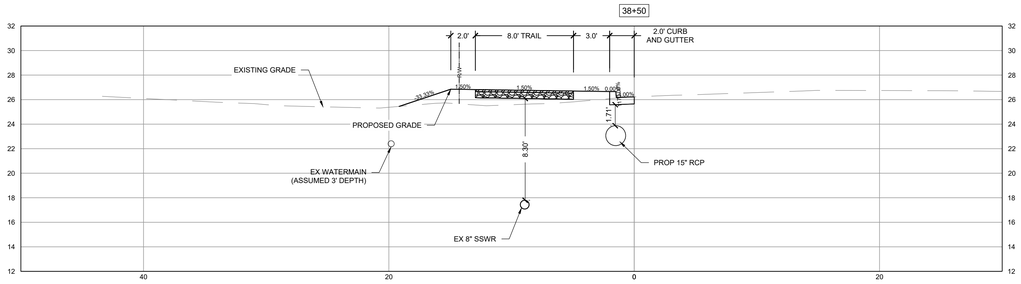

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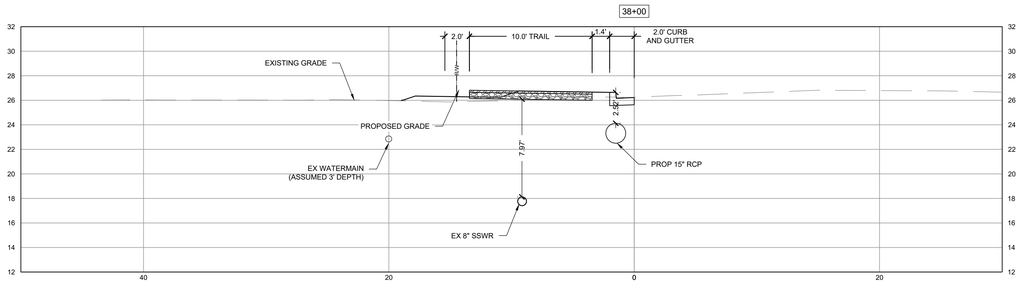

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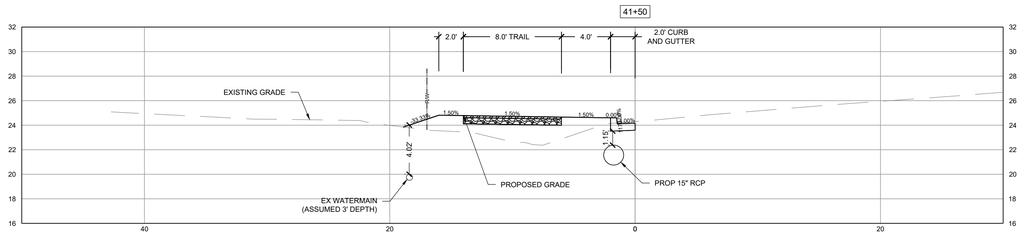

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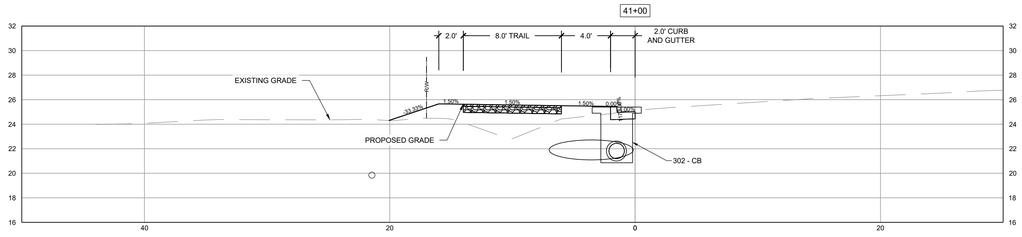

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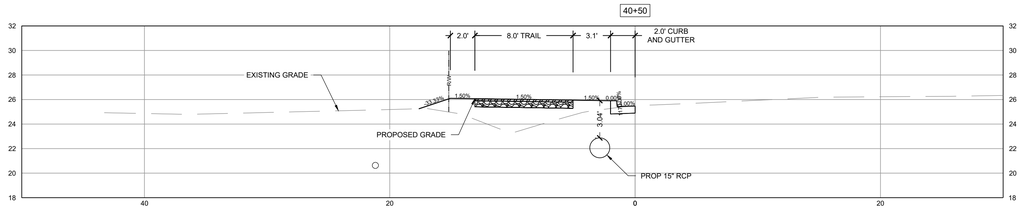

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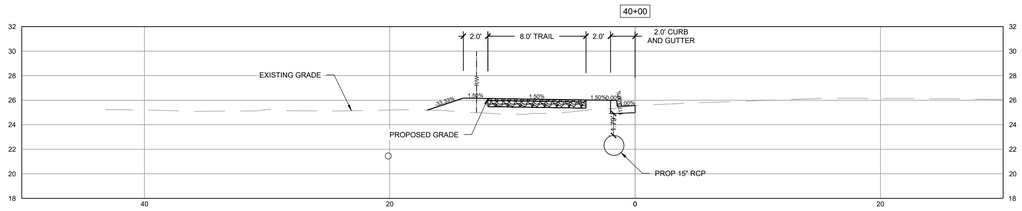


STEWART

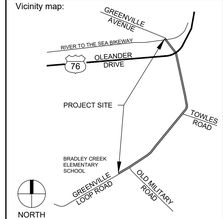
101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925

FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21014

Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



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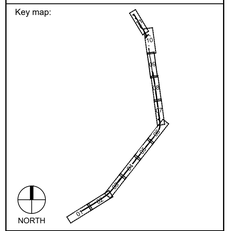

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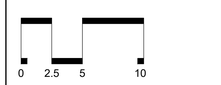
10.09.2023



SCALE: 1"=5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO

Sheet #: L5.07

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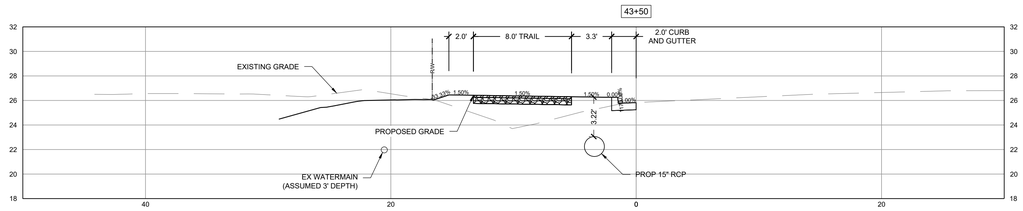

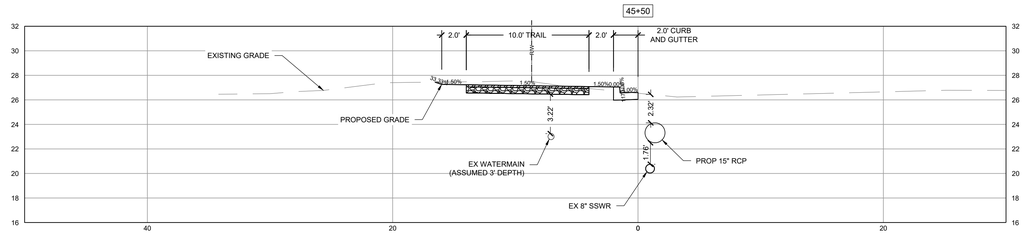

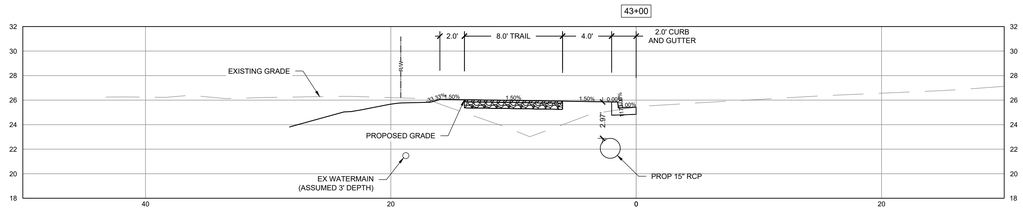

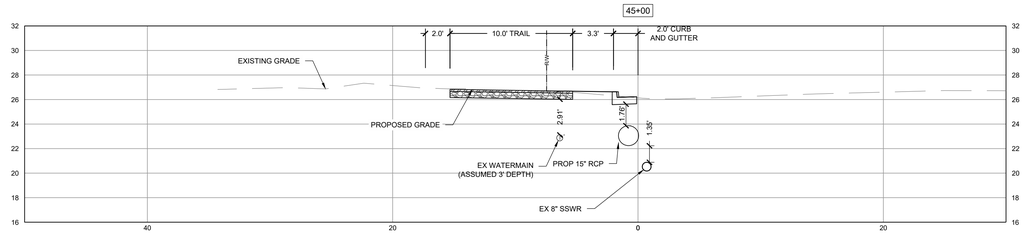

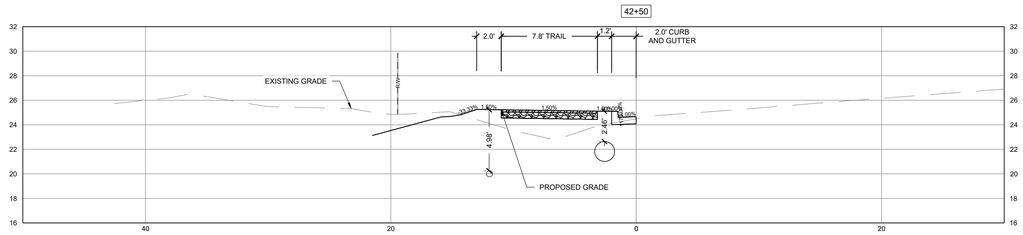

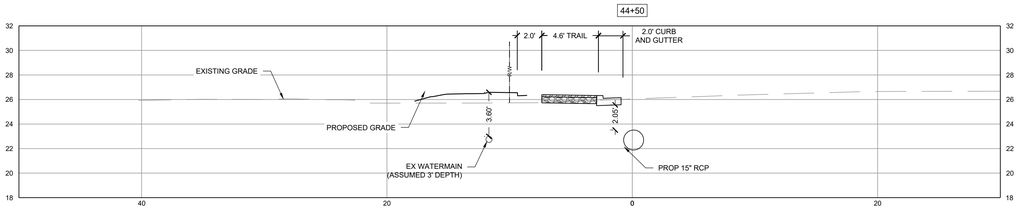

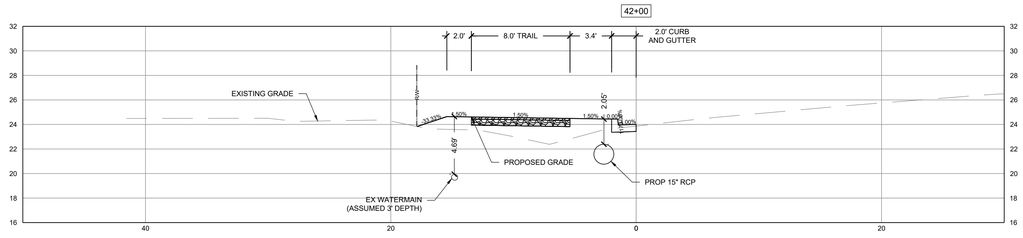

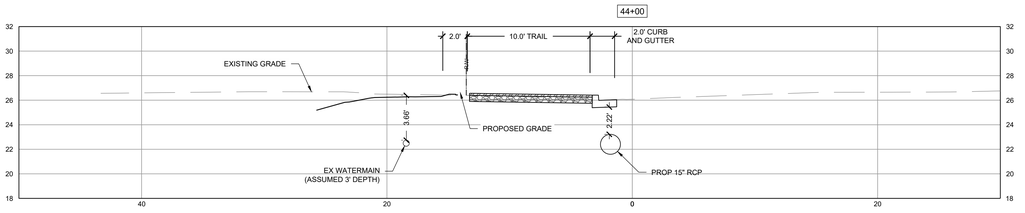

STEWART

101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
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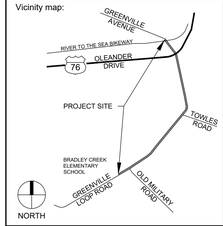
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21014

Client:

CITY OF WILMINGTON
NORTH CAROLINA

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



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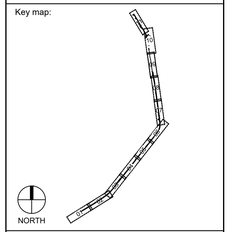

Seal:

0 2.5 5 10

SCALE: 1"=5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO

Sheet #: L5.08

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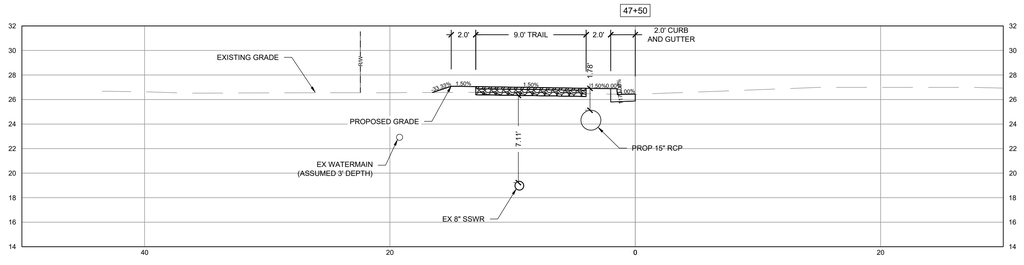

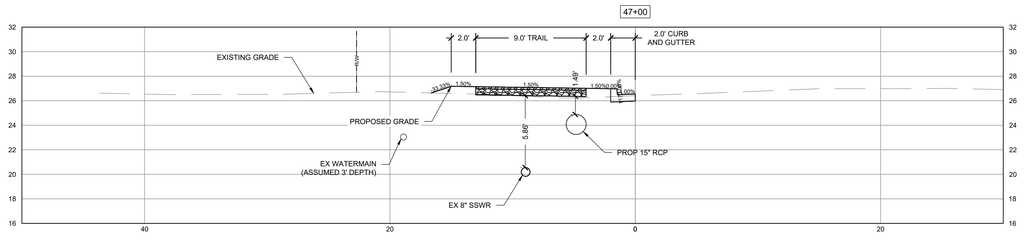

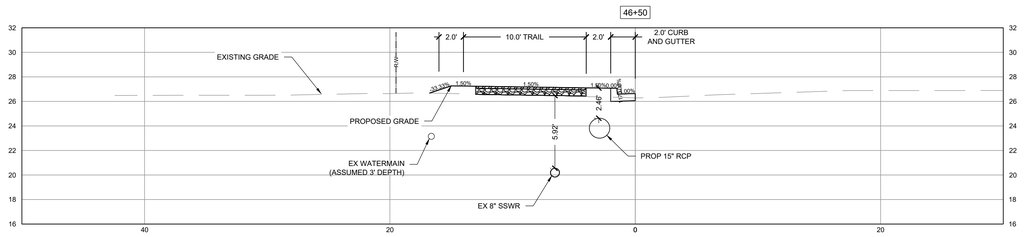

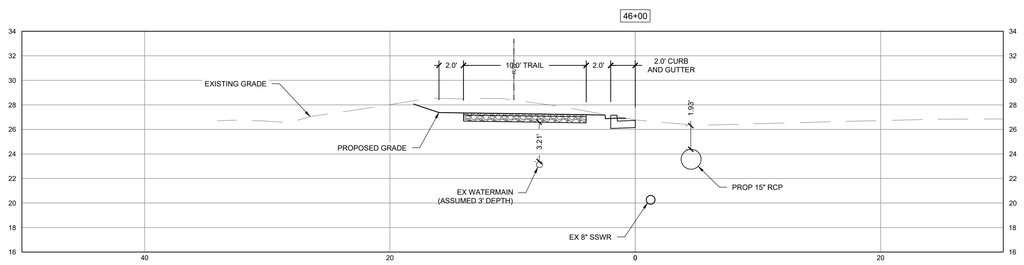

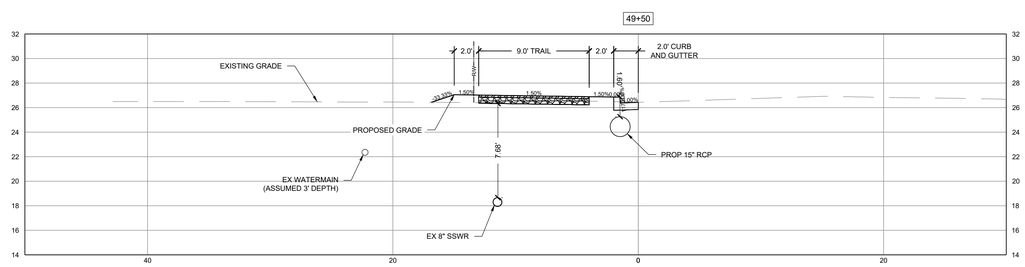

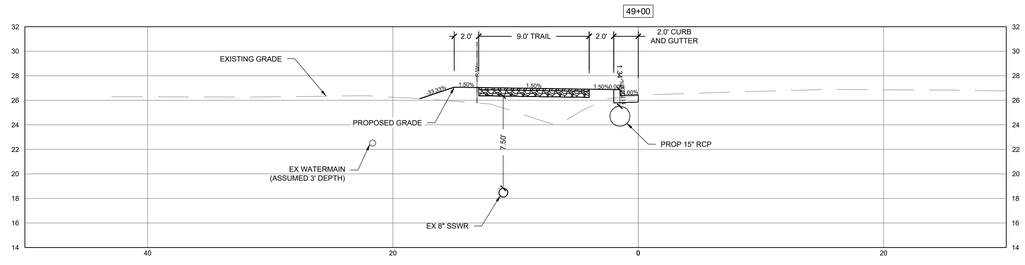

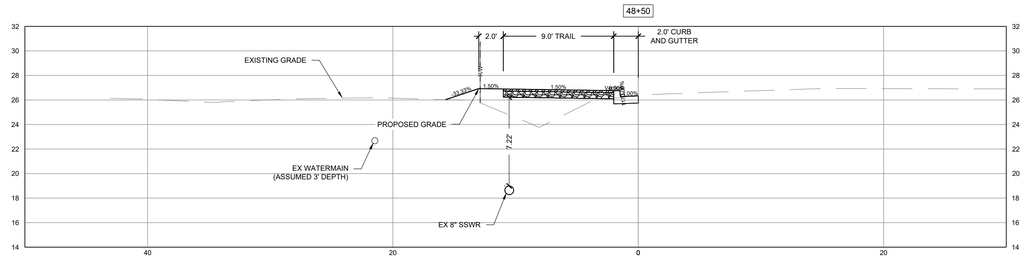

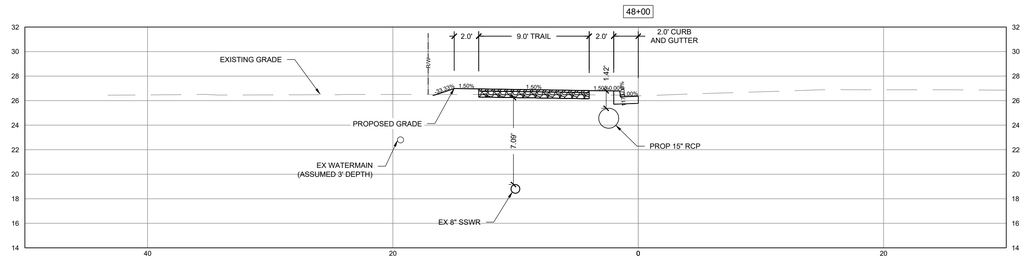

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CHARLOTTE, NC 28202
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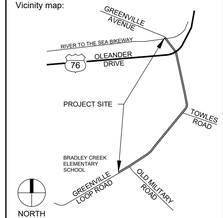
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21014

Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



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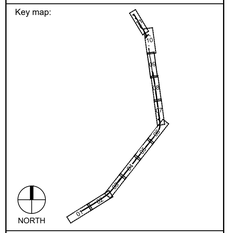

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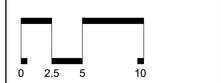

SCALE: 1"=5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO

Sheet #: L5.09

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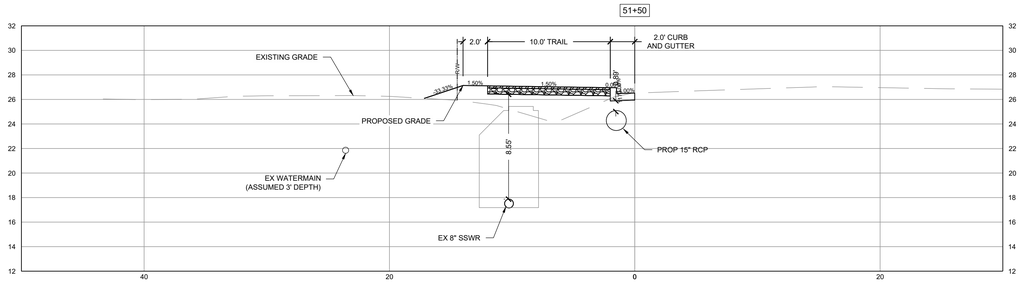

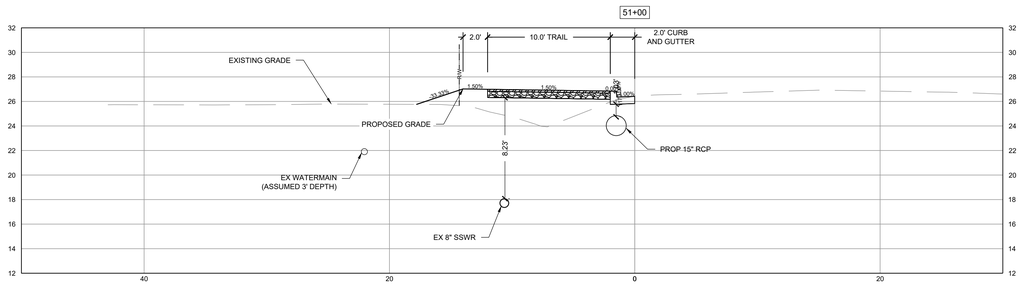

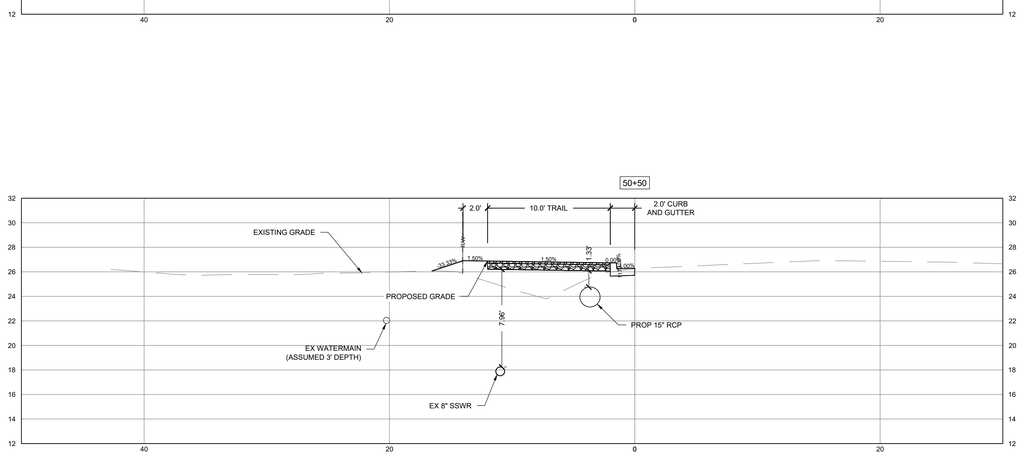

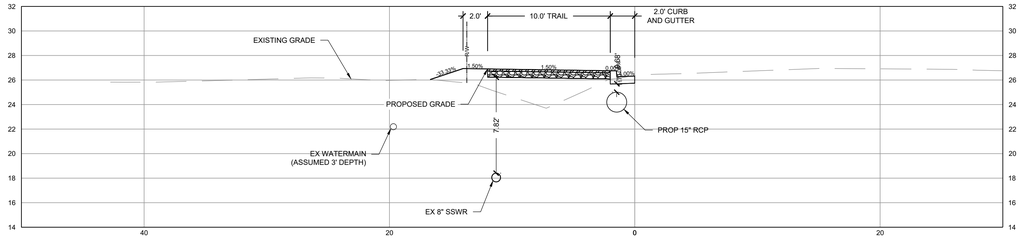

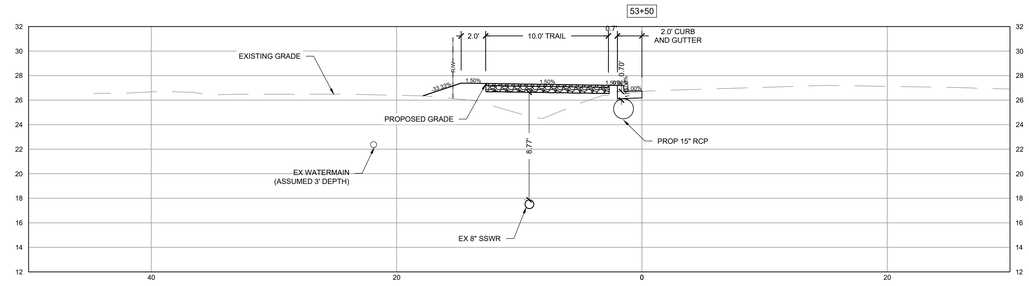

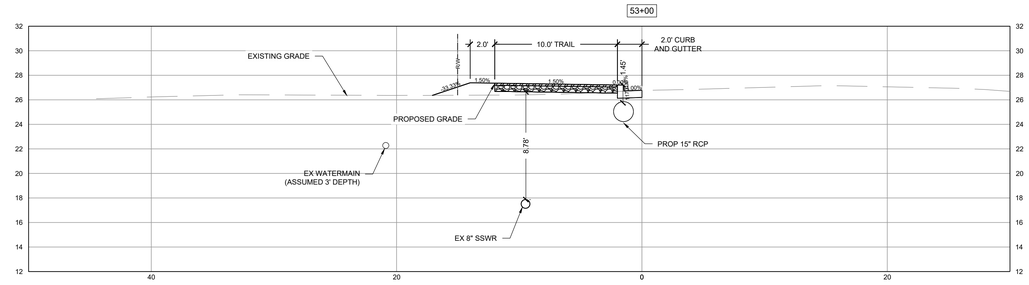

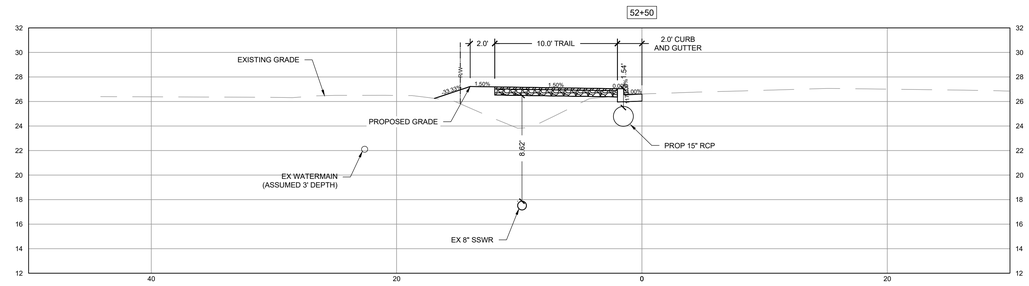

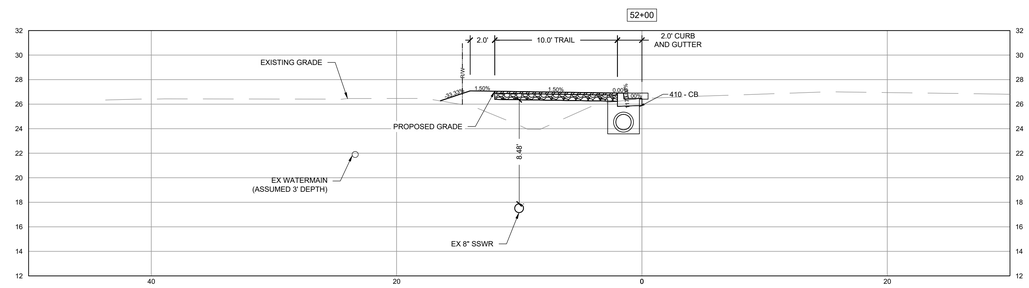

STEWART

101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
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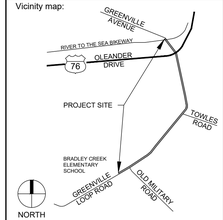
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21014

Client:

CITY OF WILMINGTON
NORTH CAROLINA

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



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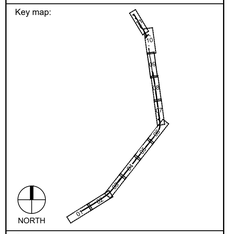

Seal:

0 2.5 5 10

SCALE: 1"=5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO

Sheet #: L5.10

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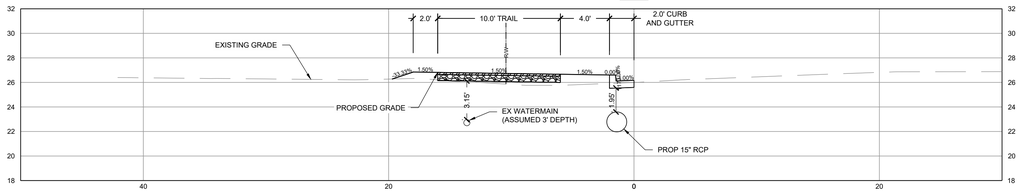

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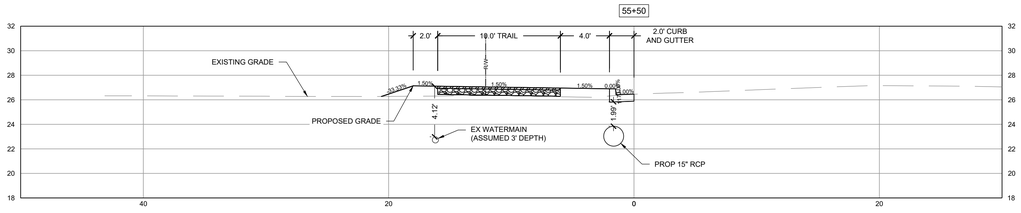

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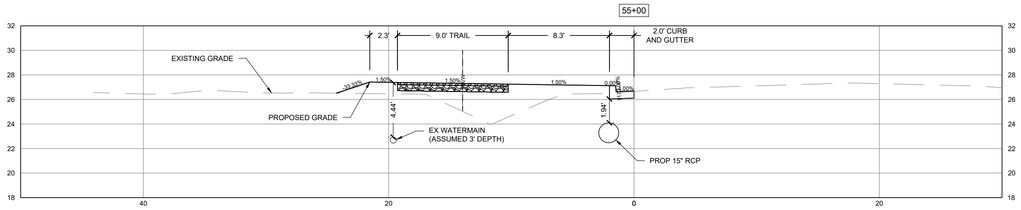

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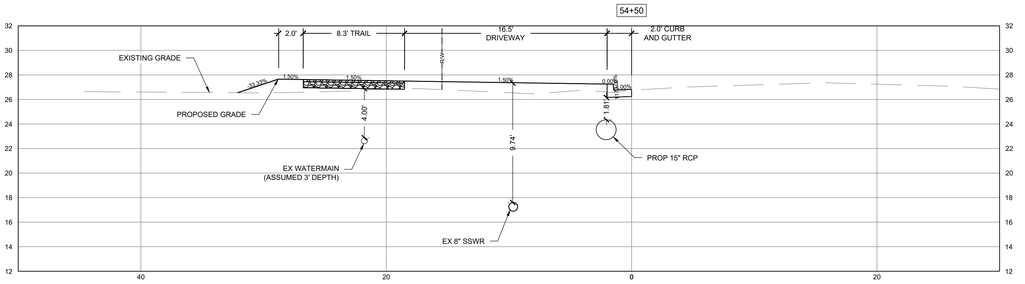

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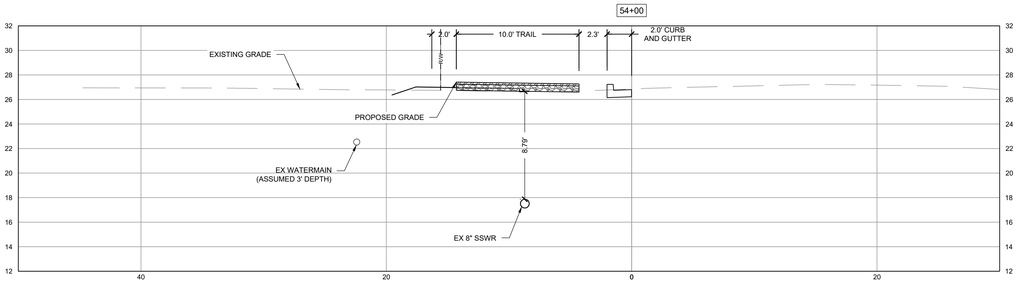

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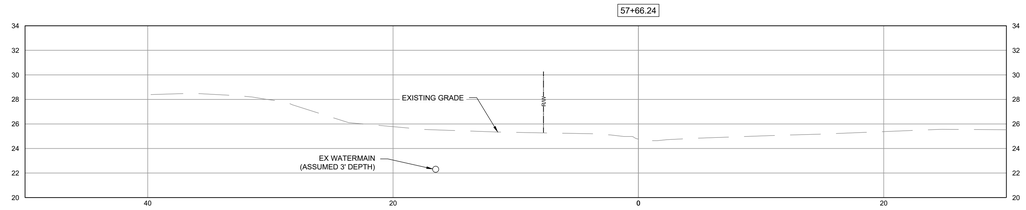

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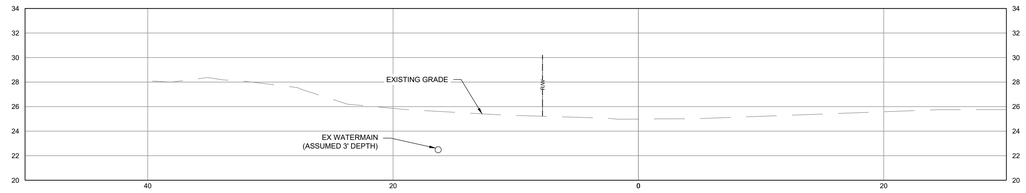

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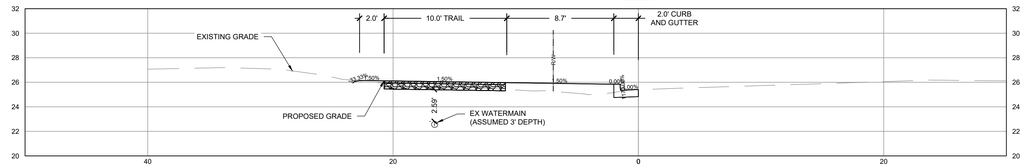

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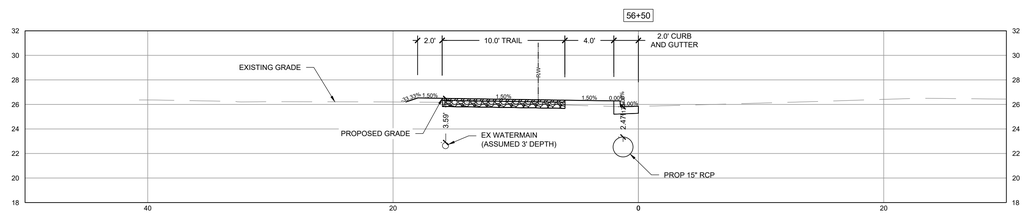

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CHARLOTTE, NC 28202
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FIRM LICENSE #: C-1051
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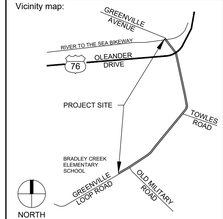
Vicinity map:



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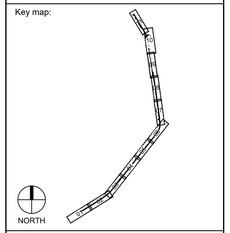

Seal:

0 2.5 5 10

SCALE: 1"=5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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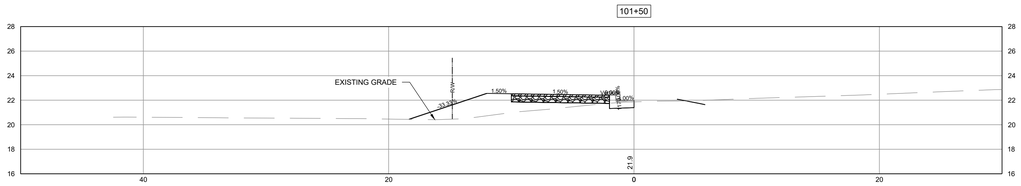
Title:

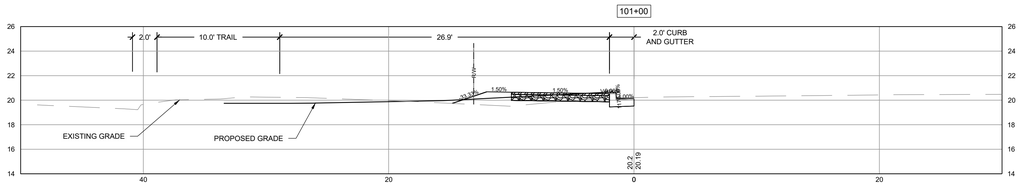
CROSS SECTIONS

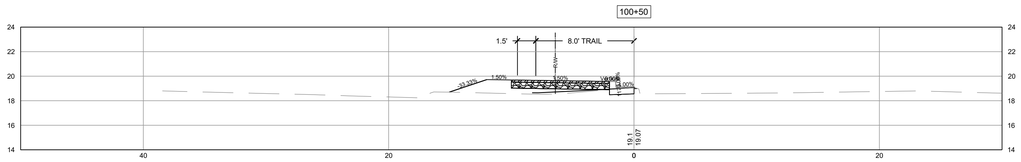
Project number: L21014
Issued Date: 2025.04.09
Drawn by: ???
Approved by: ???

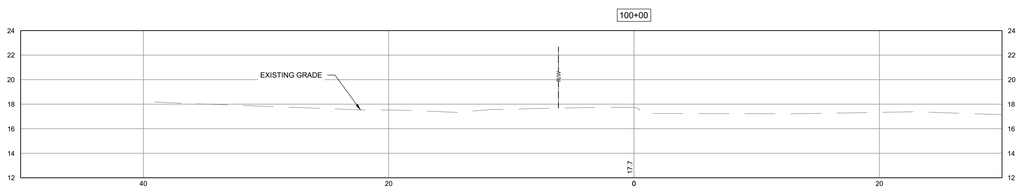
Sheet #: L5.11

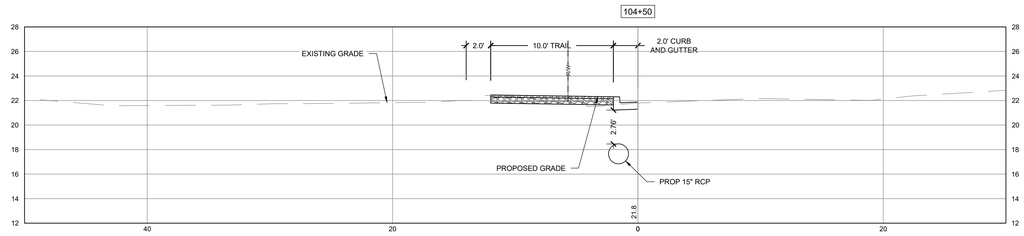
\\stewart-eng.local\stewart\PD\Projects\2021\l21014 - greenville loop trail section 3\DWGS\3-CD\3-Sheets\L210144-L5.00 Cross Sections.dwg Apr 09, 2025 - 3:47pm

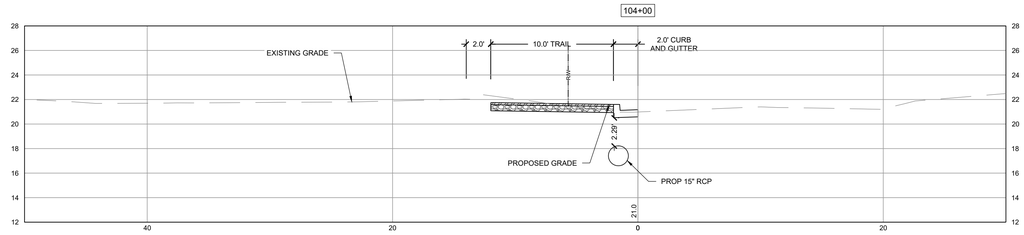


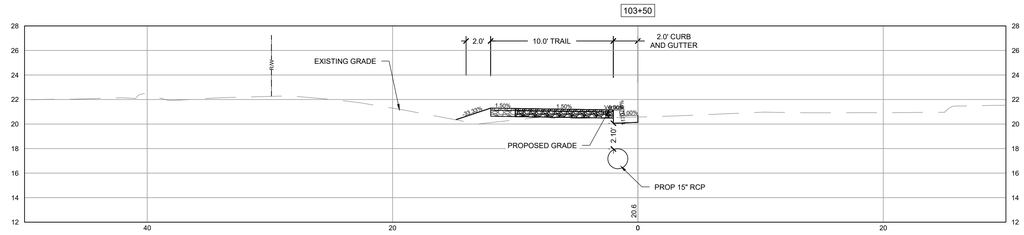


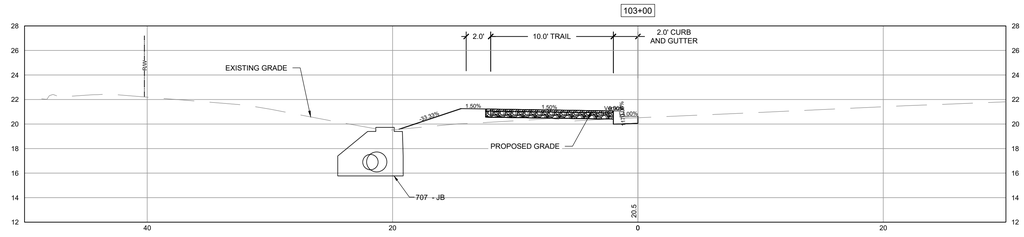


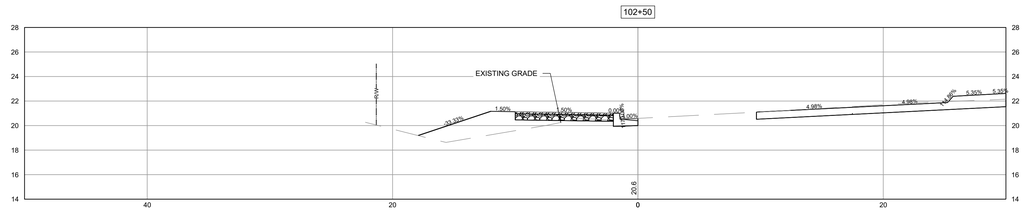












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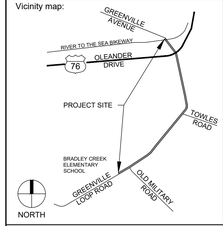
Vicinity map:



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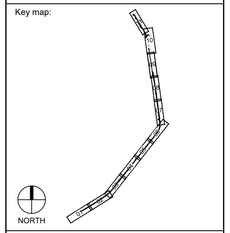

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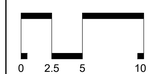

SCALE: 1"=5'

Project:

GREENVILLE LOOP TRAIL SECTION 3

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Title:

CROSS SECTIONS

Project number: L21014
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Approved by: JDO
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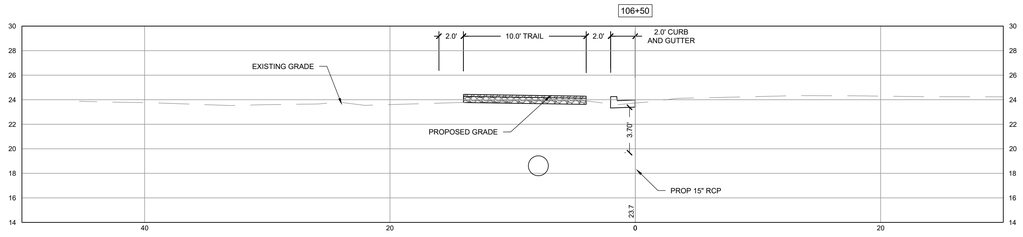

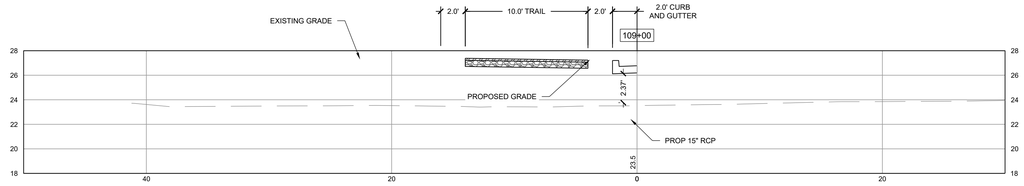

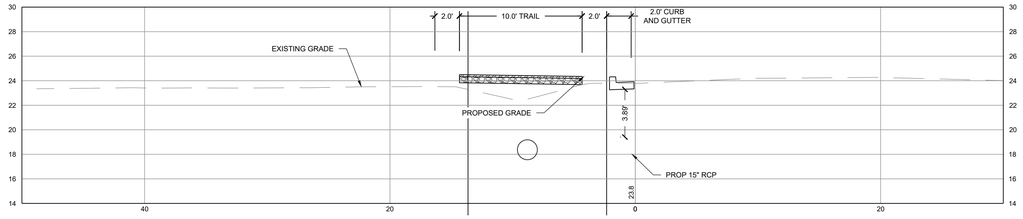

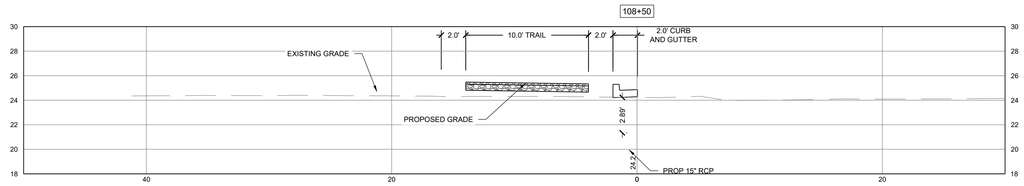

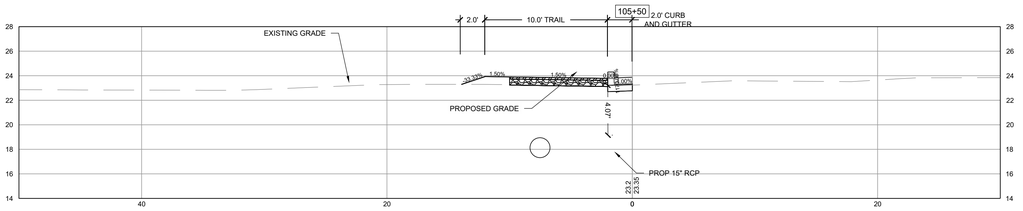

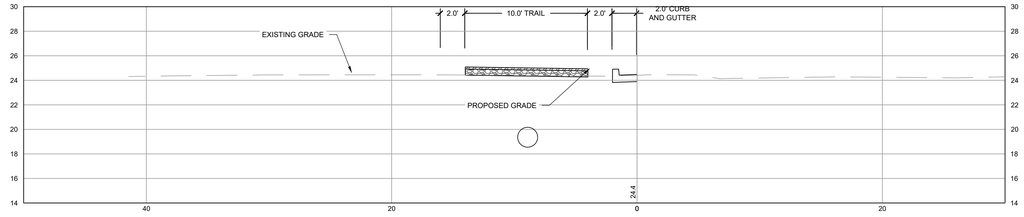

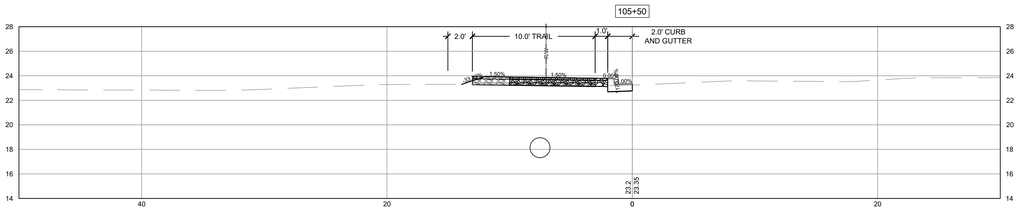

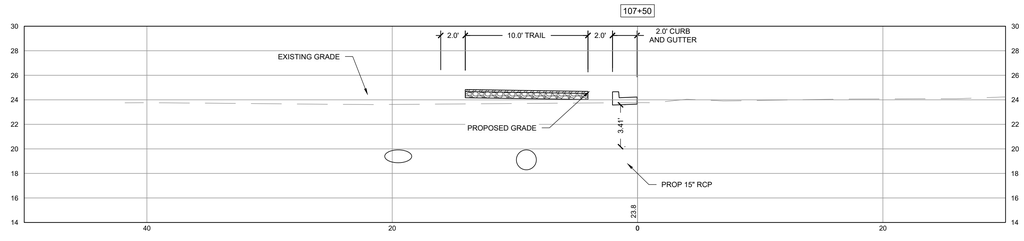

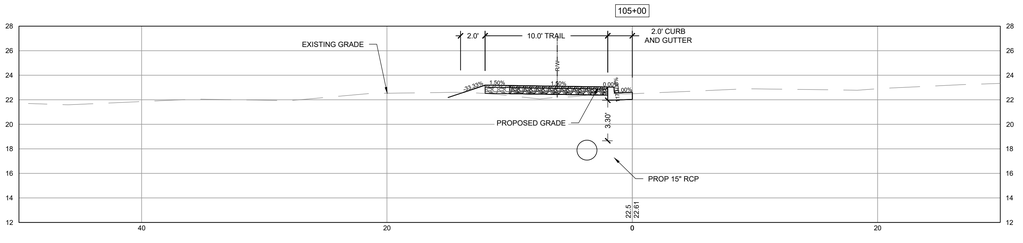

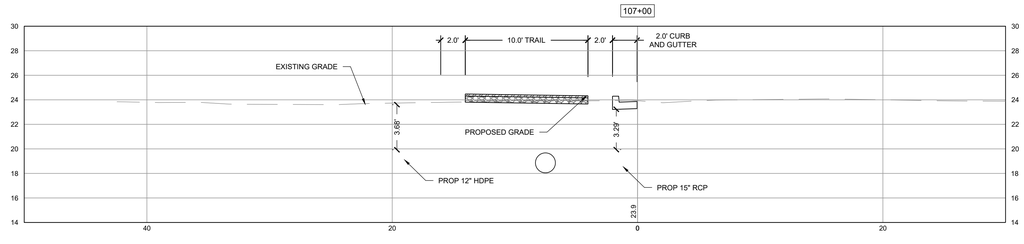

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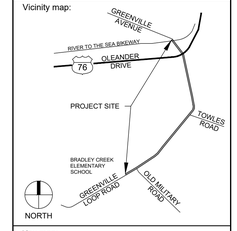

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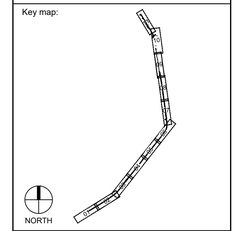

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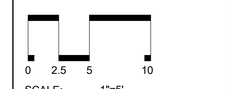

SCALE: 1"=5'

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GREENVILLE LOOP TRAIL SECTION 3

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CROSS SECTIONS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JDO
Sheet #: L5.13

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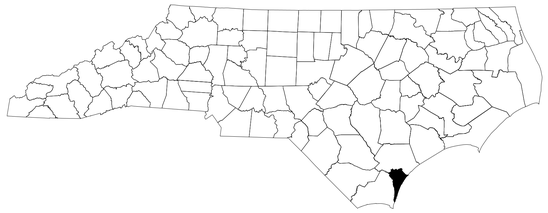
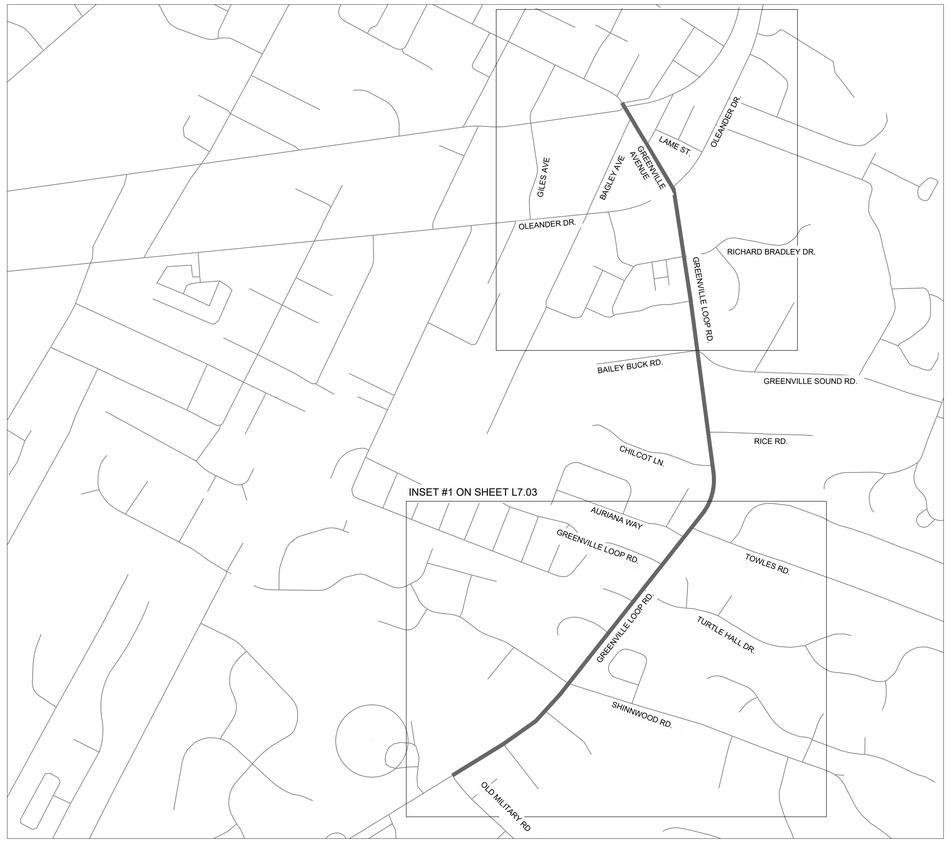
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

NEW HANOVER COUNTY





VICINITY MAP
SCALE: 1" = 500'
NORTH

INDEX OF SHEETS

SHEET NO.	TITLE
L7.00	TRAFFIC MANAGEMENT COVER
L7.01	TRAFFIC MANAGEMENT NOTES
L7.02	TRAFFIC MANAGEMENT NOTES
L7.03	TRAFFIC MANAGEMENT PLAN PH 1
L7.04	TRAFFIC MANAGEMENT PLAN PH 2
L7.05	TRAFFIC MANAGEMENT PHASING PLAN

SHEET NO.

CITY PROJECT NUMBER: 2TRST1591

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL
1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561
750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)
PHONE: (919) 773-2800 FAX: (919) 771-2745

_____ *TRAFFIC CONTROL PROJECT ENGINEER*

_____ *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*

DIVISION OF HIGHWAYS · STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION · WORK ZONE TRAFFIC CONTROL

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PROJECT #: L21014

*APPROVED:*_____
*DATE:*_____

SEAL

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW BOARDS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY - DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - EXITS AND ENTRANCE RAMPS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - LANE DROPS
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- REMOVAL
- TEMPORARY PAVEMENT

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW BOARD
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED ATTENUATOR (TMA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

EXISTING PROPOSED TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

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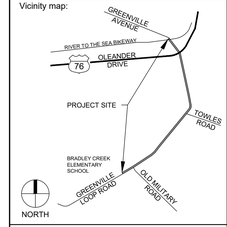

Key map:

Seal:

Project:

GREENVILLE LOOP TRAIL SECTION 3

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TRAFFIC MANAGEMENT NOTES

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JOT
Approved by: GD
Sheet #: L7.01

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GENERAL NOTES / LOCAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
GREENVILLE LOOP RD.	7:00 AM TO 9:00 AM AND 2:00 PM TO 5:00 PM (MON. THRU FRI.)

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

GREENVILLE LOOP RD.

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 7:00 A.M. DECEMBER 31st TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 2:00 P.M. THURSDAY AND 9:00 A.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY TO 9:00 A.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 7:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 7:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 7:00 A.M. FRIDAY AND 9:00 A.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 2:00 P.M. TUESDAY TO 9:00 A.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 7:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.

D) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.

E) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS, OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

PAVEMENT EDGE DROP OFF REQUIREMENTS

G) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

H) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 200 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

I) NOTIFY THE ENGINEER THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

SIGNING

J) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

K) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

L) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

PAVEMENT MARKINGS AND MARKERS

M) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

N) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

O) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.

P) ALL CURB RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

Q) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

MANAGEMENT STRATEGIES

THE PROJECT WILL BE CONSTRUCTED USING A COMBINATION OF STAGED CONSTRUCTION AND LANE CLOSURES.

ACCESS TO DRIVEWAYS GREENVILLE LOOP RD. ARE TO BE MAINTAINED AT ALL TIMES.

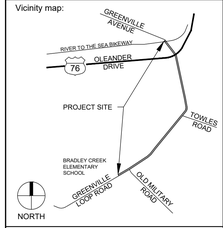
NOTIFY THE ENGINEER, NEW HANOVER COUNTY EMERGENCY SERVICES, AND CITY OF WILMINGTON THIRTY (30) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

STEWART
101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L21014

Client:

CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



Key map:

NORTH

Seal:

NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

TRAFFIC MANAGEMENT NOTES

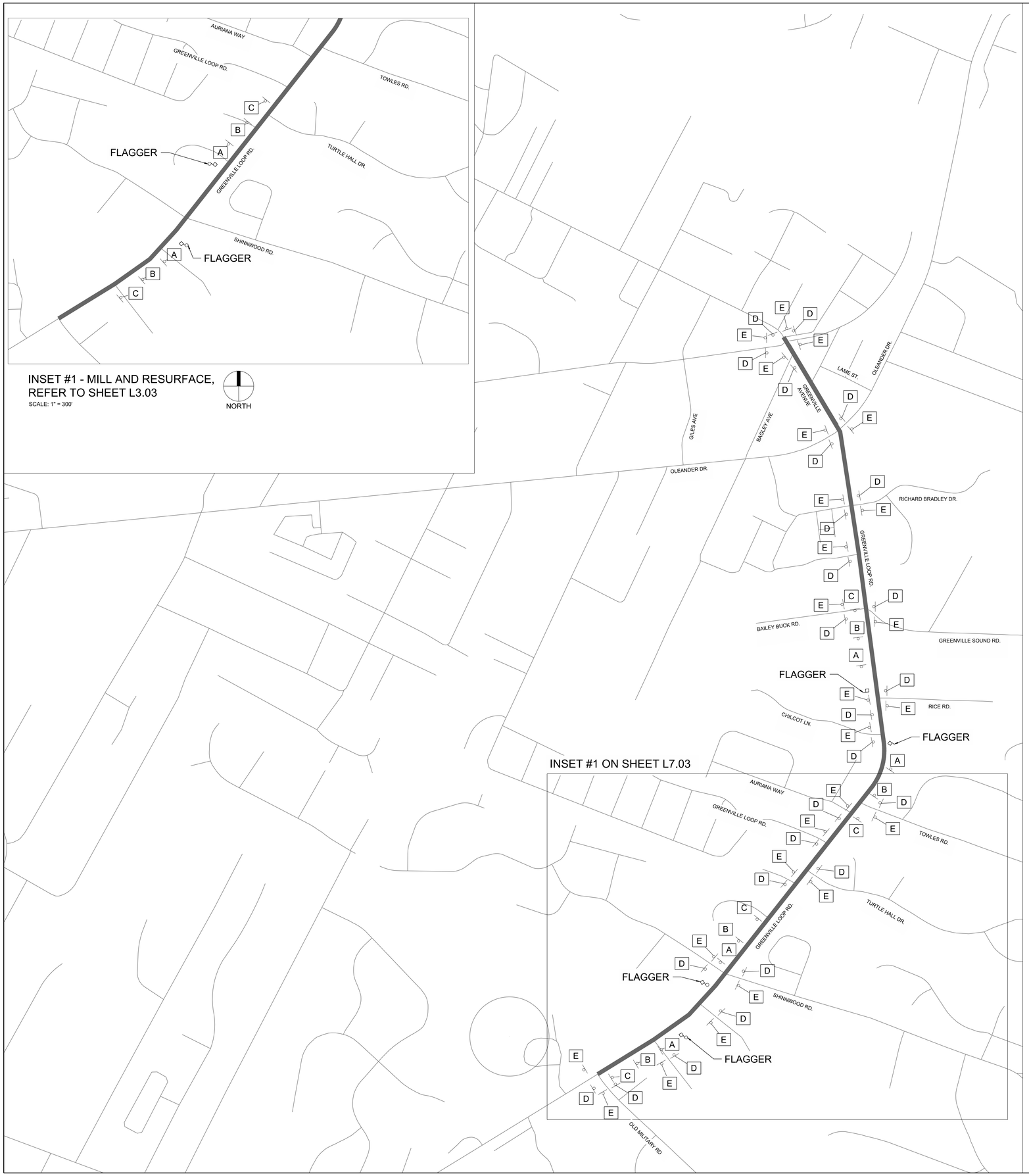
Project number: L21014
Issued Date: 2025.04.09
Drawn by: JOT
Approved by: GD
Sheet #: L7.02

\\stewart-eng.local\stewart\PDI\Projects\2021\21014 - greenville loop trail section 3\DWGS\3-CD\3-Sheets\L21014-L7.00 Traffic Management Plan.dwg Apr 09, 2025 - 4:34pm

INSET #1 - MILL AND RESURFACE, REFER TO SHEET L3.03

SCALE: 1" = 300'

NORTH



A — W20-7A, 48" X 48"

B — BE PREPARED TO STOP — W3-4, 48" X 48"

C — ONE LANE ROAD AHEAD — W20-4, 48" X 48"

D — ROAD WORK AHEAD — W20-1, 48" X 48"

E — END ROAD WORK — G20-2a, 48" X 24"

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Client:

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NORTH CAROLINA

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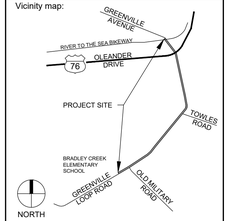
F 910.341.5881

Vicinity map:



Key map:

NORTH

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN 10.09.2023

0 150 300 600

SCALE: 1"=300'

NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description

Title:

TRAFFIC MANAGEMENT PLAN PH 1

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JOT
Approved by: GD
Sheet #: L7.03

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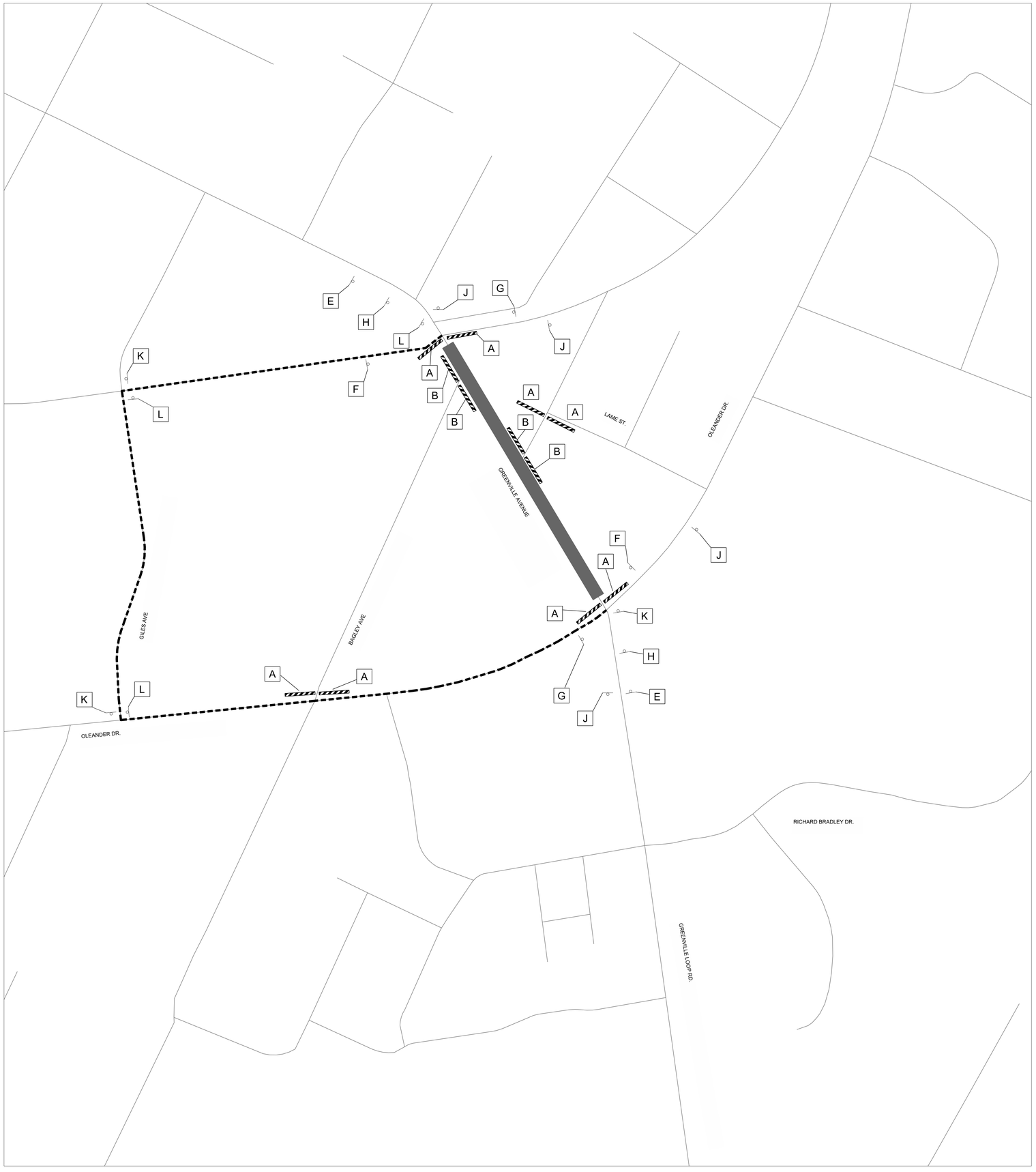
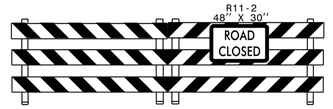


A

TYPE III WING BARRICADES

B



TYPE III BARRICADE(S)

C — ROAD CLOSED 500 FT — W20-3B 48" X 48"

D — ROAD CLOSED 1000 FT — W20-3C 48" X 48"

E — ROAD CLOSED AHEAD — W20-3A 48" X 48"

F — ROAD CLOSED AHEAD — W20-3A 48" X 48"

NEXT RIGHT — SP-4R 42" X 12"

G — ROAD CLOSED AHEAD — W20-3A 48" X 48"

NEXT LEFT — SP-4L 42" X 12"

H — DETOUR AHEAD — W20-2 48" X 48"

J — END DETOUR — M-48a 24" X 18"

K — DETOUR — M4-9 30" X 24"

L — DETOUR — M4-9 30" X 24"

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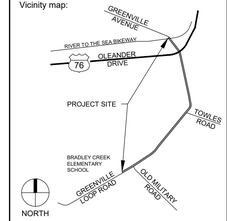
F 910.341.5881

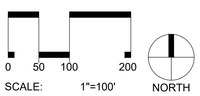
Vicinity map:



Key map:

NORTH

Seal:



Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

TRAFFIC MANAGEMENT PLAN PH 2

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JOT
Approved by: GD
Sheet #: L7.04

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PHASING

PHASE I

STEP 1: INSTALL WORK ZONE ADVANCE WARNING SIGNS ON -L1- (ALONG GREENVILLE LOOP ROAD) ACCORDING TO ROADWAY STANDARD DRAWING NO. 1101.01.

STEP 2: USING ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 2 OF 14, AS NEEDED, COMPLETE THE FOLLOWING:

- CONSTRUCT THE CONCRETE CURB AND GUTTER,
  - ON -L1- (ALONG GREENVILLE LOOP ROAD)
    - FROM STA. 10+00 RT. TO STA. 58+00 RT.
  - ON -L2- (ALONG GREENVILLE LOOP ROAD)
    - FROM STA. 100+00 RT. TO STA. 110+50 RT.
- CONSTRUCT THE STORM DRAINAGE,
  - ON -L1- (ALONG GREENVILLE LOOP ROAD)
    - FROM STA. 10+00 RT. TO STA. 21+50 RT.
    - FROM STA. 26+00 RT. TO STA. 36+50 RT.
    - FROM STA. 37+50 RT. TO STA. 48+50 RT.
    - FROM STA. 48+85 RT. TO STA. 53+75 RT.
    - FROM STA. 54+25 RT. TO STA. 57+00 RT.
  - ON -L2- (ALONG GREENVILLE LOOP ROAD)
    - FROM STA. 103+00 RT. TO STA. 108+15 RT.
    - FROM STA. 108+75 RT. TO STA. 110+50 RT.

STEP 3: USING ROADWAY STANDARD DRAWING NO. 1101.04 SHEET 1 OF 1, AS NEEDED, COMPLETE THE FOLLOWING:
CONSTRUCT THE ASPHALT MULTI-USE PATH ON -L1- (OFFSET FROM GREENVILLE LOOP ROAD) BETWEEN STA. 10+00 AND STA. 58+00.
CONSTRUCT THE ASPHALT MULTI-USE PATH ON -L2- (OFFSET FROM GREENVILLE LOOP ROAD) BETWEEN STA. 100+00 AND STA. 110+50.

STEP 4: USING ROADWAY STANDARD DRAWING NO. 1101.02 SHEET 2 OF 14, AND FLAGGERS AS NEEDED, COMPLETE THE FOLLOWING:

- CONSTRUCT MILL AND RESURFACE TURN LANE ON -L1- (ALONG GREENVILLE LOOP ROAD) BETWEEN STA. 23+00 AND STA. 26+00
- CONSTRUCT MILL AND RESURFACE TURN LANE ON -L1- (ALONG GREENVILLE LOOP ROAD) BETWEEN STA. 44+75 AND STA. 47+15
- INSTALL PROPOSED MANHOLE WITHIN STREET ON -L1- (OFFSET FROM GREENVILLE LOOP ROAD) BETWEEN STA. 19+50 AND STA. 20+00.

STEP 5: USING ROADWAY STANDARD DRAWING NO. 1101.03 SHEET 2 OF 9, AND FLAGGERS AS NEEDED, COMPLETE THE FOLLOWING:

- COMPLETE MILL AND RESURFACE ENTIRE ROAD SECTION ON -L2- (ALONG GREENVILLE LOOP ROAD) BETWEEN STA. 103+00 AND STA. 110+50.

STEP 6: COMPLETE PROJECT, REMOVE ALL TRAFFIC CONTROL DEVICES, AND REMOVE ALL WORK ZONE ADVANCE WARNING SIGNS.

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101 N. TRYON ST., #1400
CHARLOTTE, NC 28202
T 704.334.7925
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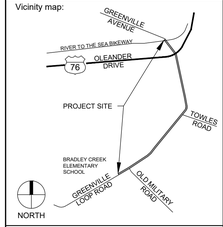
PROJECT #: L21014

Client:
CITY OF WILMINGTON
NORTH CAROLINA
CITY OF WILMINGTON
ENGINEERING DIVISION
P.O. BOX 1810
WILMINGTON, NC 28402
T 910.341.7807
F 910.341.5881

Vicinity map:



Key map:

NORTH

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN
10.09.2023

NORTH

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

TRAFFIC MANAGEMENT PHASING PLAN

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JOT
Approved by: GD
Sheet #: L7.05

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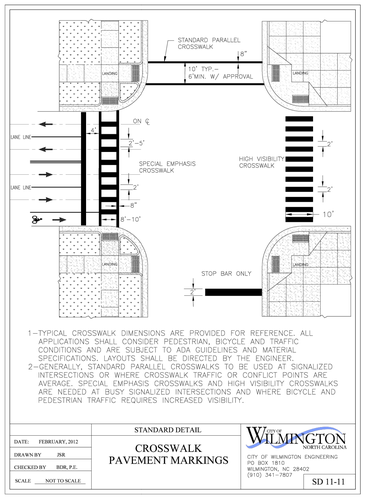
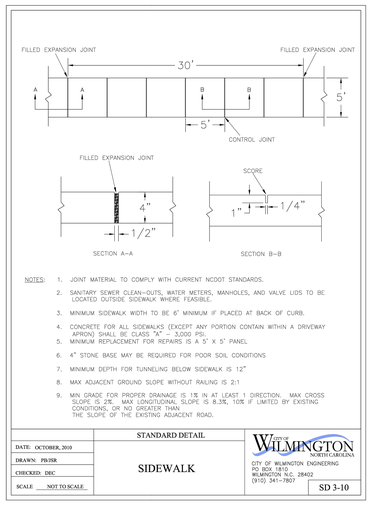


1-TYPICAL CROSSWALK DIMENSIONS ARE PROVIDED FOR REFERENCE. ALL APPLICATIONS SHALL CONSIDER PEDESTRIAN, BICYCLE AND TRAFFIC CONDITIONS AND ARE SUBJECT TO ADA GUIDELINES AND MATERIAL SPECIFICATIONS. LAYOUTS SHALL BE DIRECTED BY THE ENGINEER.
2-GENERALLY, STANDARD PARALLEL CROSSWALKS TO BE USED AT SIGNALIZED INTERSECTIONS OR WHERE CROSSWALK TRAFFIC OR CONFLICT POINTS ARE AVERAGE. SPECIAL EMPHASIS CROSSWALKS AND HIGH VISIBILITY CROSSWALKS ARE NEEDED AT BUSY SIGNALIZED INTERSECTIONS AND WHERE BICYCLE AND PEDESTRIAN TRAFFIC REQUIRES INCREASED VISIBILITY.

STANDARD DETAIL
CROSSWALK PAVEMENT MARKINGS
DATE: FEBRUARY, 2012
DRAWN BY: JSR
CHECKED BY: BDB, P.E.
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807
SD 11-11

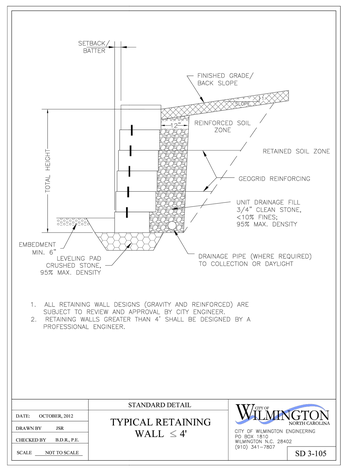
12 CROSSWALK NTS



NOTES:
1. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
2. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, AND VALVE LIDS TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
3. MINIMUM SIDEWALK WIDTH TO BE 6' MINIMUM IF PLACED AT BACK OF CURB.
4. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3,000 PSI.
5. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL
6. 4" STONE BASE MAY BE REQUIRED FOR POOR SOIL CONDITIONS
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
9. MIN GRADE FOR PROPER DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 8.3%, 10% IF LIMITED BY EXISTING CONDITIONS, OR NO GREATER THAN THE SLOPE OF THE EXISTING ADJACENT ROAD.

STANDARD DETAIL
SIDEWALK
DATE: OCTOBER, 2010
DRAWN: PB/JSR
CHECKED: DEC
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, N.C. 28402
(910) 341-7807
SD 3-10

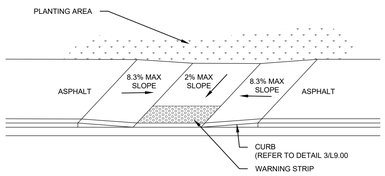
11 SIDEWALK NTS



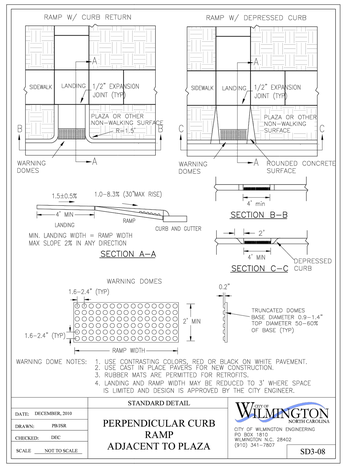
1. ALL RETAINING WALL DESIGNS (GRAVITY AND REINFORCED) ARE SUBJECT TO REVIEW AND APPROVAL BY CITY ENGINEER.
2. RETAINING WALLS GREATER THAN 4' SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER.

STANDARD DETAIL
TYPICAL RETAINING WALL ≤ 4'
DATE: OCTOBER, 2012
DRAWN BY: JSR
CHECKED BY: B.D.B., P.E.
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807
SD 3-105

10 RETAINING WALL NTS



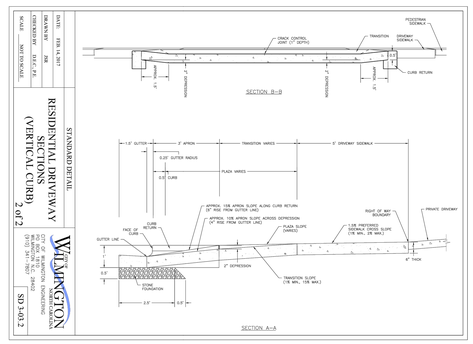
9 ACCESSIBLE RAMP 2 NTS



WARNING DOME NOTES:
1. USE CONTRASTING COLORS, RED OR BLACK ON WHITE PAVEMENT.
2. USE CAST IN PLACE PAVERS FOR NEW CONSTRUCTION.
3. RUBBER MATS ARE PERMITTED FOR RETROFITS.
4. LANDING AND RAMP WIDTH MAY BE REDUCED TO 3' WHERE SPACE IS LIMITED AND DESIGN IS APPROVED BY THE CITY ENGINEER.

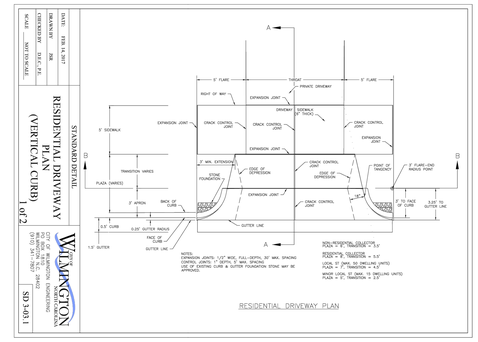
STANDARD DETAIL
PERPENDICULAR CURB RAMP ADJACENT TO PLAZA
DATE: DECEMBER, 2010
DRAWN: PB/JSR
CHECKED: DEC
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807
SD3-08

8 ACCESSIBLE RAMP 1 NTS



STANDARD DETAIL
RESIDENTIAL DRIVEWAY SECTIONS (VERTICAL CURB) 2 of 2
DATE: FEB 14, 2017
DRAWN BY: JSR
CHECKED BY: D.E.C., P.E.
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807
SD 3-10.2

7 RESIDENTIAL DRIVEWAY 2 OF 2 NTS



STANDARD DETAIL
RESIDENTIAL DRIVEWAY PLAN (VERTICAL CURB) 1 of 2
DATE: FEB 14, 2017
DRAWN BY: JSR
CHECKED BY: D.E.C., P.E.
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
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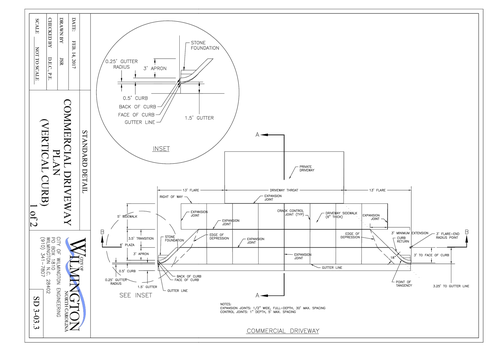
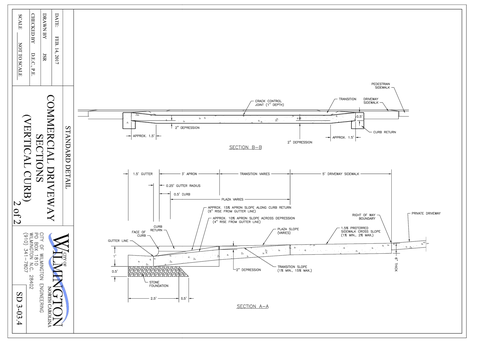
(910) 341-7807
SD 3-10.1

6 RESIDENTIAL DRIVEWAY 1 OF 2 NTS



STANDARD DETAIL
COMMERCIAL DRIVEWAY SECTIONS (VERTICAL CURB) 2 of 2
DATE: FEB 14, 2017
DRAWN BY: JSR
CHECKED BY: D.E.C., P.E.
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807
SD 3-10.4

5 COMMERCIAL DRIVEWAY 2 OF 2 NTS



STANDARD DETAIL
COMMERCIAL DRIVEWAY PLAN (VERTICAL CURB) 1 of 2
DATE: FEB 14, 2017
DRAWN BY: JSR
CHECKED BY: D.E.C., P.E.
SCALE: NOT TO SCALE
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CITY OF WILMINGTON ENGINEERING
PO BOX 1810
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(910) 341-7807
SD 3-10.3

4 COMMERCIAL DRIVEWAY 1 OF 2 NTS

STANDARD DETAIL
COMMERCIAL DRIVEWAY PLAN (VERTICAL CURB) 1 of 2
DATE: FEB 14, 2017
DRAWN BY: JSR
CHECKED BY: D.E.C., P.E.
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
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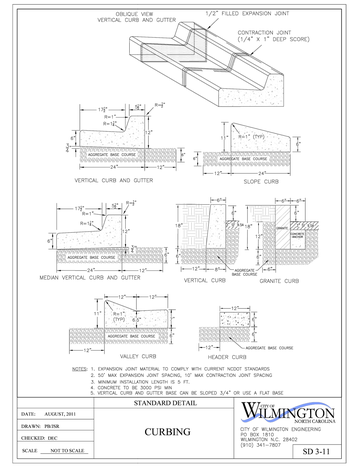
3 2' CURB AND GUTTER NTS



NOTES:
1. EXPANSION JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
2. 50' MAX EXPANSION JOINT SPACING, 10' MAX CONTRACTION JOINT SPACING
3. MINIMUM INSTALLATION LENGTH IS 5 FT.
4. CONCRETE TO BE 3000 PSI MIN.
5. VERTICAL CURB AND GUTTER BASE CAN BE SLOPED 3/4" OR USE A FLAT BASE

STANDARD DETAIL
CURBING
DATE: AUGUST, 2011
DRAWN: PB/JSR
CHECKED: DEC
SCALE: NOT TO SCALE
CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
PO BOX 1810
WILMINGTON, NC 28402
(910) 341-7807
SD 3-11

2 ASPHALT PAVEMENT 3/4" = 1'-0"

1 ASPHALT TRAIL 3/4" = 1'-0"
SECTION

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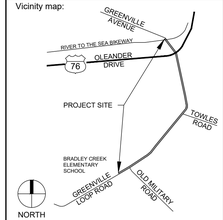
Vicinity map:



Key map:

Seal:

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

SITE DETAILS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L9.00

\\stewart-eng.local\stewart\FS\Projects\2021\21014 - greenville loop trail section 3\DWGS\3-CD\3-Sheets\L21014-L9.00 Site Details.dwg Apr 09, 2025 - 4:37pm

12 NOT USED

9 NOT USED

6 NOT USED

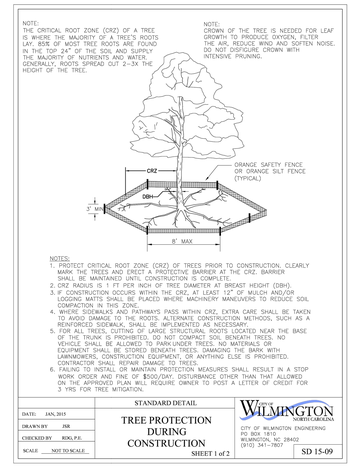
3 NOT USED

11 NOT USED

8 NOT USED

5 NOT USED

2 TREE PROTECTION 2 OF 2 NTS



NOTES:

1. THE TREE PROTECTION FENCING SHALL NOT BE VIOLATED FOR THE ENTIRE DURATION OF THE PROJECT WITHOUT APPROVAL FROM URBAN FORESTRY STAFF.
2. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL. LETTERS TO BE 3" HIGH, MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
3. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER. FOR TREE PROTECTION AREAS LESS THAN 100' IN PERIMETER, PROVIDE NO LESS THAN TWO SIGNS PER PROTECTION AREA.
4. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC. MAINTAIN TREE PROTECTION FENCE AND SIGNS THROUGHOUT DURATION OF PROJECT.
5. TREE PROTECTION FENCING AND SIGNAGE SHALL BE REMOVED AFTER CONSTRUCTION.
6. ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OF WILMINGTON, BASED ON ACTUAL FIELD CONDITIONS.

DATE: JAN, 2015	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY: JSR	TREE PROTECTION DURING CONSTRUCTION	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY: RDG, P.E.	SHEET 2 of 2	SD 15-09
SCALE: NOT TO SCALE		

10 NOT USED

7 NOT USED

4 NOT USED

1 TREE PROTECTION 1 OF 2 NTS

NOTES:

1. PROTECT CRITICAL ROOT ZONE (CRZ) OF TREES PRIOR TO CONSTRUCTION. CLEARLY MARK THE TREES AND ERECT A PROTECTIVE BARRIER AT THE CRZ. BARRIER SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETE.
2. CRZ RADIUS IS 1 FT PER INCH OF TREE DIAMETER AT BREAST HEIGHT (DBH).
3. IF CONSTRUCTION OCCURS WITHIN THE CRZ, AT LEAST 12" OF MULCH AND/OR LOGGING MATTS SHALL BE PLACED WHERE MACHINERY MANEUVERS TO REDUCE SOIL COMPACTION IN THIS ZONE.
4. WHERE SIDEWALKS AND PATHWAYS PASS WITHIN CRZ, EXTRA CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE ROOTS. ALTERNATE CONSTRUCTION METHODS, SUCH AS A REINFORCED SIDEWALK, SHALL BE IMPLEMENTED AS NECESSARY.
5. FOR ALL TREES, CUTTING OF LARGE STRUCTURAL ROOTS LOCATED NEAR THE BASE OF THE TRUNK IS PROHIBITED. DO NOT COMPACT SOIL BENEATH TREES. NO VEHICLE SHALL BE ALLOWED TO PARK UNDER TREES. NO MATERIALS OR EQUIPMENT SHALL BE STORED BENEATH TREES. DAMAGING THE BARK WITH LAWNMOWERS, CONSTRUCTION EQUIPMENT, OR ANYTHING ELSE IS PROHIBITED. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO TREES.
6. FAILURE TO INSTALL OR MAINTAIN PROTECTION MEASURES SHALL RESULT IN A STOP WORK ORDER AND FINE OF $500/DAY. DISTURBANCE OTHER THAN THAT ALLOWED ON THE APPROVED PLAN WILL REQUIRE OWNER TO POST A LETTER OF CREDIT FOR 3 YRS FOR TREE MITIGATION.

DATE: JAN, 2015	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA
DRAWN BY: JSR	TREE PROTECTION DURING CONSTRUCTION	CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON, NC 28402 (910) 341-7807
CHECKED BY: RDG, P.E.	SHEET 1 of 2	SD 15-09
SCALE: NOT TO SCALE		

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PROJECT #: L21014

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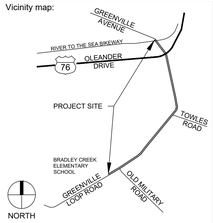
Vicinity map:



Key map:

Seal:

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

SITE DETAILS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: TM
Approved by: TD
Sheet #: L9.01

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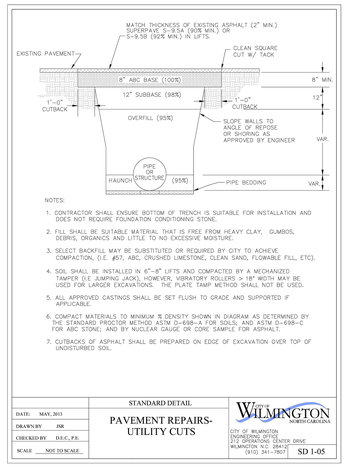
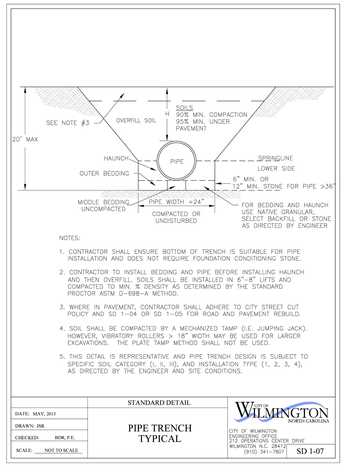
12 NOT USED

11 NOT USED

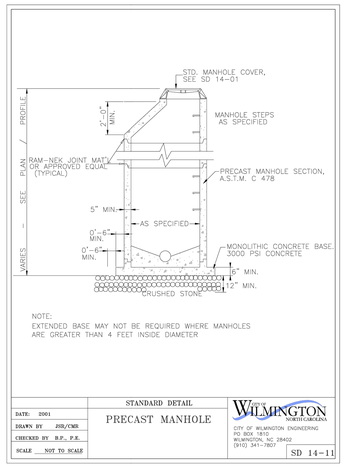
10 PAVEMENT REPAIR DETAIL NTS



9 TRENCHING DETAIL NTS

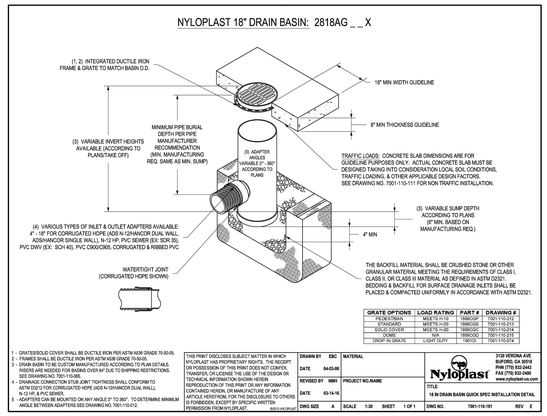


8 MANHOLE COVER DETAIL NTS

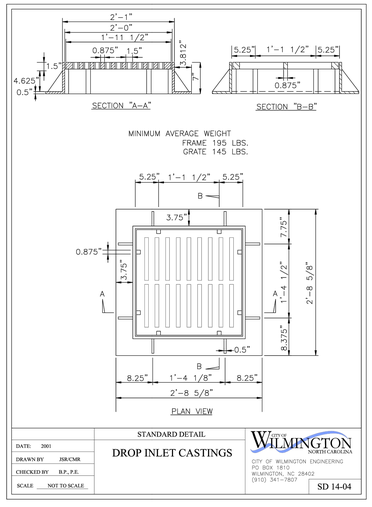


7 PRECAST MAHOLE DETAIL NTS

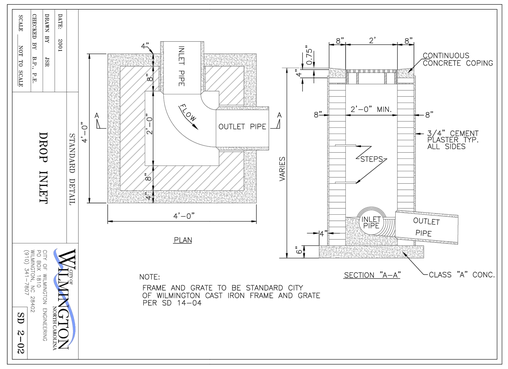
6 NYLOPLAST DRAIN BASIN NTS



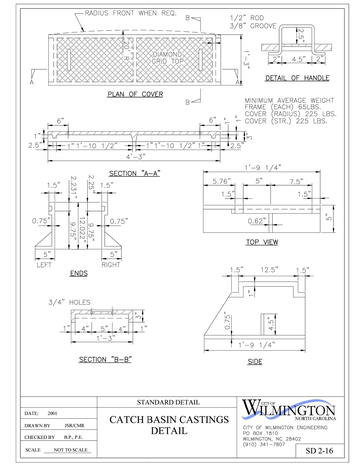
5 DROP INLET GRATE DETAIL



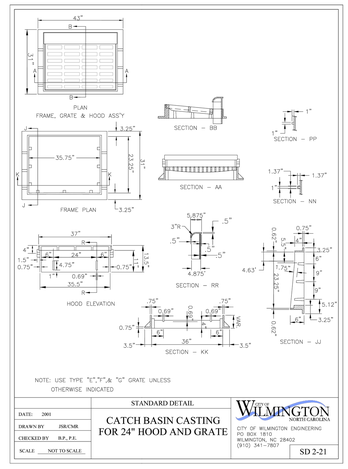
4 DROP INLET DETAIL NTS



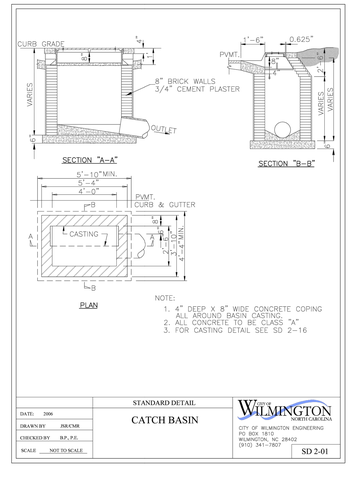
3 CATCH BASIN GRATE DETAIL NTS



2 24" FRAME, GRATE, AND HOOD DETAIL NTS



1 CATCH BASIN DETAIL NTS



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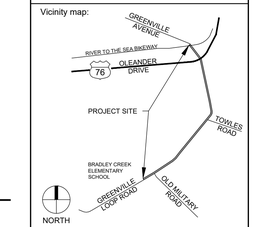
Vicinity map:



Key map:

Seal:

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

STORM DRAINAGE DETAILS

Project number: L21014
Issued Date: 2025.04.09
Drawn by: JP
Approved by: JO
Sheet #: L9.20

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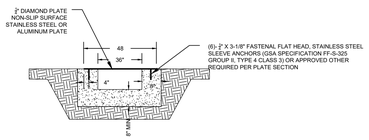


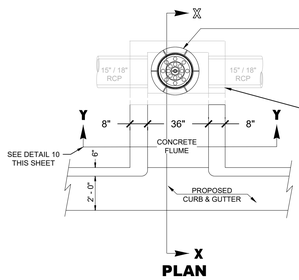
SECTION

10 METAL COVER AT CURB FLUME

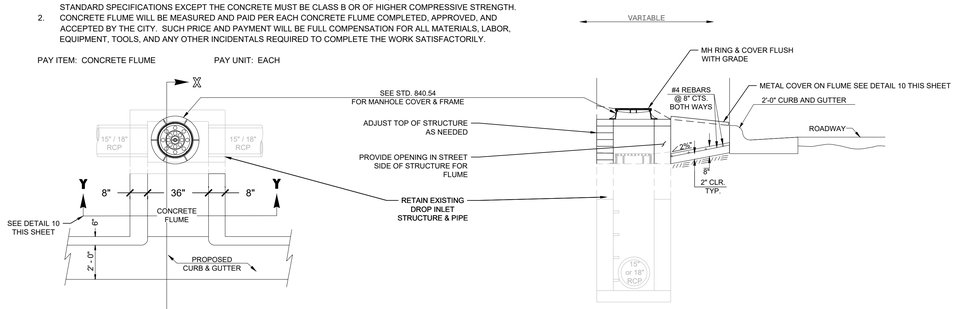
CONCRETE FLUME NOTES:

1. AT LOCATIONS SHOWN IN THE PLANS, CONSTRUCT CONCRETE FLUME IN ACCORDANCE WITH THE DETAILS IN THE PLANS. USE MATERIALS MEETING THE REQUIREMENTS OF SECTIONS 825, 848, 850, AND 1070 OF THE CURRENT NCDOT STANDARD SPECIFICATIONS EXCEPT THE CONCRETE MUST BE CLASS B OR OF HIGHER COMPRESSIVE STRENGTH.
2. CONCRETE FLUME WILL BE MEASURED AND PAID PER EACH CONCRETE FLUME COMPLETED, APPROVED, AND ACCEPTED BY THE CITY. SUCH PRICE AND PAYMENT WILL BE FULL COMPENSATION FOR ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, AND ANY OTHER INCIDENTALS REQUIRED TO COMPLETE THE WORK SATISFACTORILY.

PAY ITEM: CONCRETE FLUME PAY UNIT: EACH



PLAN



SECTION X-X

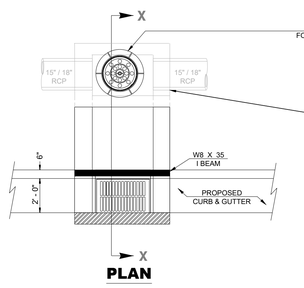
NOTES:

1. MORTAR JOINTS ¼" TO ½" THICK.
2. USE CLASS "B" CONCRETE THROUGHOUT.
3. USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
4. USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
5. CHAMFER ALL EXPOSED CORNERS 1".
6. PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER, USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66

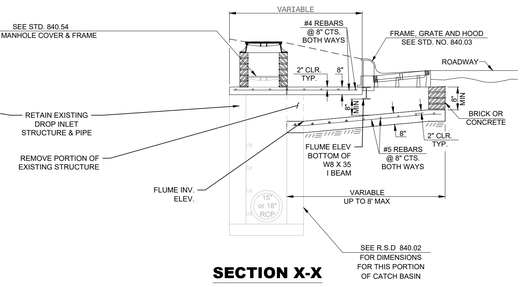
INSTALLATION NOTES:

1. REMOVE DROP INLET FRAME & GRATE.
2. ADJUST TOP ELEVATION OF EXISTING STRUCTURE AS NEEDED TO PROVIDE 2% SLOPE ON FLUME.
3. INSTALL REINFORCED CONCRETE FLUME BETWEEN CURB AND EXISTING STRUCTURE.
4. INSTALL ¼" DIAMOND PLATE NON-SLIP SURFACE STAINLESS STEEL OR ALUMINUM PLATE OVER OPEN FLUME.
5. INSTALL CONCRETE TOP WITH MANHOLE RING & COVER FLUSH WITH GRADE IN PLANTER OR MULTI USE PATH.

5 CURB FLUME TO EXISTING STORM DRAIN INLET



PLAN



SECTION X-X

NOTES:

1. MORTAR JOINTS ¼" TO ½" THICK.
2. USE CLASS "B" CONCRETE THROUGHOUT.
3. USE TYPE "E", "F" AND "G" GRATES UNLESS OTHERWISE INDICATED.
4. USE BRICK OR CONCRETE BLOCK WHICH COMPLIES WITH THE REQUIREMENTS OF SECTION 840 OF THE STANDARD SPECIFICATIONS.
5. CHAMFER ALL EXPOSED CORNERS 1".
6. PROVIDE ALL CATCH BASINS OVER 3'-6" IN DEPTH WITH STEPS 12" ON CENTER, USE STEPS WHICH COMPLY WITH STD. DRAWING 840.66

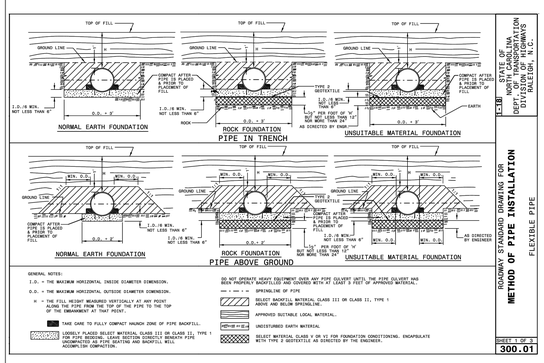
INSTALLATION NOTES:

1. REMOVE DROP INLET FRAME & GRATE.
2. REMOVE PORTION OF EXISTING STRUCTURE TO ACCOMMODATE OFFSET CHANNEL.
3. INSTALL CONCRETE OFFSET CHANNEL, CATCH BASIN HOOD, FRAME AND GRATE.
4. INSTALL CONCRETE TOP ON DRAINAGE STRUCTURE AND OFFSET CHANNEL.
5. INSTALL MANHOLE RING & COVER FLUSH WITH GRADE IN PLANTER OR MULTI USE PATH.

9 NOT USED

4 OFFSET CATCH BASIN TO EXISTING STORM DRAIN INLET

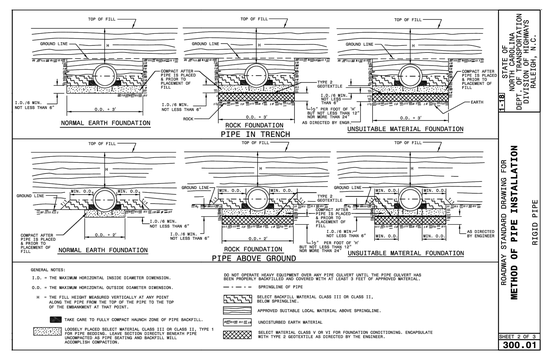
8 NOT USED



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR **METHOD OF PIPE INSTALLATION** FLEXIBLE PIPE

SHEET 1 OF 3 **300.01**

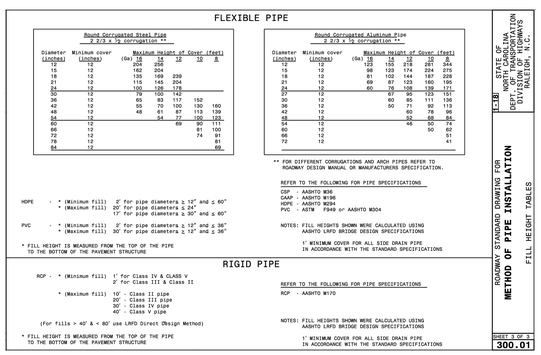


STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR **METHOD OF PIPE INSTALLATION** RIGID PIPE

SHEET 2 OF 3 **300.01**

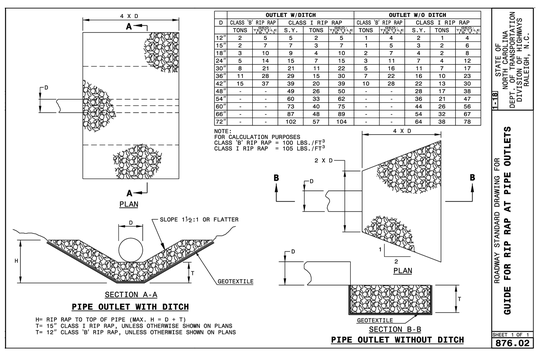
1 PIPE INSTALLATION NTS



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR **METHOD OF PIPE INSTALLATION** FILL HEIGHT TABLES

SHEET 3 OF 3 **300.01**



STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ROADWAY STANDARD DRAWING FOR **GUIDE FOR RIP RAP AT PIPE OUTLETS**

SHEET 1 OF 1 **876.02**

3 RIP RAP APRON NTS

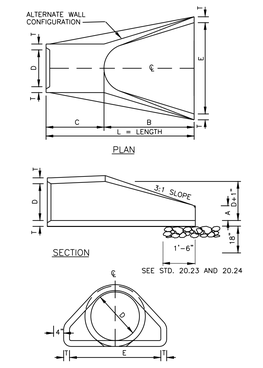


TABLE OF DIMENSIONS							
D	T	A	B	C	E	L	WT.
12"	2-1/4"	4"	2'-0"	4'-1"	2'-0"	6'-1"	730
15"	2-1/4"	6"	2'-3"	3'-10"	2'-0"	6'-1"	730
18"	2-1/2"	9"	2'-3"	3'-10"	3'-0"	6'-1"	1190
24"	3"	10"	2'-8"	3'-8"	4'-0"	6'-2"	1770
30"	3-1/2"	1'-0"	4'-6"	1'-8"	5'-0"	6'-2"	2380
36"	4"	1'-3"	5'-3"	2'-11"	6'-0"	8'-2"	5320
42"	4-1/2"	1'-9"	5'-3"	2'-11"	6'-6"	8'-2"	5920
48"	5"	2'-0"	6'-0"	2'-2"	7'-0"	8'-2"	7470
54"	5-1/2"	2'-3"	5'-6"	2'-10"	7'-6"	8'-4"	8810
60"	6"	2'-6"	5'-0"	3'-3"	8'-0"	8'-3"	11180
66"	6-1/2"	3'-0"	6'-0"	2'-3"	8'-6"	8'-3"	12530
72"	7"	3'-0"	6'-6"	1'-9"	9'-0"	8'-3"	13980

GENERAL NOTES:

1. SEE FORMER NCDOT STANDARD 310.01 FOR DETAILS.
2. REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M170, TABLE 2, WALL B.
3. ALL CONCRETE TO BE 3600 P.S.I COMPRESSIVE STRENGTH.
4. PROVIDE TONGUE OR SPIGOT JOINT AT INLET END SECTION.
5. PROVIDE GROOVE OR BELL JOINT AT OUTLET END SECTION.
6. THE DIMENSIONS FOR END SECTIONS SHALL SUBSTANTIALLY AGREE WITH THE TABLE. MINOR VARIATIONS WILL BE PERMITTED BASED ON THE MANUFACTURER'S STANDARD FORMS AND TEMPLATES.
7. NOT TO BE USED IN NCDOT MAINTAINED RIGHT OF WAY.

2 FLARED END SECTION NTS

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NORTH CAROLINA

CITY OF WILMINGTON
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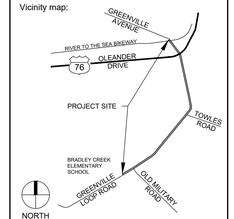
Vicinity map:



Key map:

Seal:

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

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No.	Date	Description
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Title:

STORM DRAINAGE DETAILS

Project number: L21014 Sheet #: **L9.21**

Issued Date: 2025.04.09

Drawn by: JP

Approved by: JO

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STRUCTURE TABLE			
STRUCTURE NAME	STRUCTURE T/C	INVERTS	DESCRIPTION
101 - CB	20.85	INV IN: 16.92 18" (102 - CB) INV OUT: 16.92 15" RCP (OF #1)	CATCH BASIN SEE DET 1/L9.20
102 - CB	21.43	INV IN: 17.17 18" (103 - CB) INV IN: 17.74 12" (113 - AD) INV OUT: 17.17 18" (101 - CB)	CATCH BASIN SEE DET 1/L9.20
103 - CB	23.56	INV IN: 18.17 18" (104 - CB) INV OUT: 18.17 18" (102 - CB)	CATCH BASIN SEE DET 1/L9.20
104 - CB	24.68	INV IN: 19.21 18" RCP (105 - CB) INV OUT: 19.21 18" (103 - CB)	CATCH BASIN SEE DET 1/L9.20
105 - CB	25.39	INV IN: 19.97 15" (114 - CB) INV OUT: 19.72 18" RCP (104 - CB)	CATCH BASIN SEE DET 1/L9.20
106 - CB	25.74	INV IN: 21.27 15" (107 - CB) INV OUT: 21.27 15" RCP (114 - CB)	CATCH BASIN SEE DET 1/L9.20
107 - CB	25.34	INV IN: 21.92 15" RCP (108 - JB) INV IN: 22.17 12" (112 - AD) INV OUT: 21.92 15" (106 - CB)	CATCH BASIN SEE DET 1/L9.20
108 - JB	25.57	INV IN: 22.09 15" (109 - CB) INV IN: 22.33 12" (111 - AD) INV OUT: 22.09 15" RCP (107 - CB)	MH
109 - CB	26.40	INV IN: 23.14 12" (110 - AD) INV OUT: 22.89 15" (108 - JB)	CATCH BASIN SEE DET 1/L9.20
110 - AD	25.85	INV OUT: 23.24 12" (109 - CB)	AD
111 - AD	24.84	INV OUT: 22.53 12" (108 - JB)	AD
112 - AD	24.63	INV OUT: 22.32 12" (107 - CB)	AD
113 - AD	24.53	INV OUT: 17.89 12" (102 - CB)	AD
114 - CB	26.04	INV IN: 20.62 15" RCP (106 - CB) INV OUT: 20.62 15" (105 - CB)	CATCH BASIN SEE DET 1/L9.20
201 - EX OSCF	25.75	INV IN: 22.61 12" (216 - AD)	OFFSET CURB FLUME SEE DETAIL 5/L9.21
202 - EX OSCB	27.22	INV IN: 22.12 15" RCP (203 - CB)	OFFSET CATCH BASIN SEE DETAIL 4/L9.21
202A - EX OSCB	26.99		OFFSET CATCH BASIN SEE DETAIL 4/L9.21
202B - EX OSCB	26.01		Null Structure
203 - CB	27.28	INV IN: 23.20 15" RCP (204 - CB) INV OUT: 23.20 15" RCP (202 - EX OSCB)	CATCH BASIN SEE DET 1/L9.20
204 - CB	26.97	INV IN: 24.02 12" (205 - FES) INV OUT: 24.03 15" RCP (203 - CB)	CATCH BASIN SEE DET 1/L9.20

STRUCTURE TABLE			
STRUCTURE NAME	STRUCTURE T/C	INVERTS	DESCRIPTION
205 - FES	26.97	INV OUT: 24.75 12" (204 - CB)	FES
206 - EX OSCB	25.97		OFFSET CATCH BASIN SEE DETAIL 4/L9.21
207 - EX OSCB	26.35	INV IN: 21.68 15" RCP (215 - FES)	OFFSET CATCH BASIN SEE DETAIL 4/L9.21
208 - EX OSCB	25.90	INV IN: 22.04 12" (214 - AD)	OFFSET CATCH BASIN SEE DETAIL 4/L9.21
209 - EX OSCB	26.78	INV IN: 23.39 15" RCP (210 - CB)	OFFSET CATCH BASIN SEE DETAIL 4/L9.21
210 - CB	26.84	INV IN: 23.90 15" RCP (213 - DI) INV IN: 23.90 15" RCP (211 - CB) INV OUT: 23.90 15" RCP (209 - EX OSCB)	CATCH BASIN SEE DET 1/L9.20
211 - CB	27.14	INV IN: 24.61 12" (212 - AD) INV OUT: 24.36 15" RCP (210 - CB)	CATCH BASIN SEE DET 1/L9.20
212 - AD	26.76	INV OUT: 24.74 12" (211 - CB)	AD
213 - DI	27.13	INV OUT: 24.19 15" RCP (210 - CB)	DI
214 - AD	25.71	INV OUT: 23.44 12" (208 - EX OSCB)	AD
215 - FES	24.56	INV OUT: 22.62 15" RCP (207 - EX OSCB)	FES
216 - AD	25.41	INV OUT: 22.84 12" (201 - EX OSCF)	AD
301 - CB	24.07	INV IN: 20.82 15" RCP (319 - CB) INV IN: 20.82 15" RCP (307 - CB) INV OUT: 20.65 24" RCP ()	CATCH BASIN SEE DET 1/L9.20
302 - CB	25.39	INV IN: 21.19 15" RCP (309 - FES) INV IN: 21.19 15" RCP (303 - CB) INV OUT: 21.19 15" RCP (319 - CB)	CATCH BASIN SEE DET 1/L9.20
303 - CB	26.01	INV IN: 21.99 12" (310 - AD) INV IN: 21.73 15" RCP (304 - CB) INV OUT: 21.73 15" RCP (302 - CB)	CATCH BASIN SEE DET 1/L9.20
304 - CB	26.58	INV IN: 22.53 12" (311 - AD) INV IN: 22.28 15" RCP (305 - CB) INV OUT: 22.28 15" RCP (303 - CB)	CATCH BASIN SEE DET 1/L9.20
305 - CB	26.59	INV IN: 22.53 15" RCP (306 - CB) INV OUT: 22.53 15" RCP (304 - CB)	CATCH BASIN SEE DET 1/L9.20
306 - CB	26.74	INV OUT: 22.90 15" RCP (305 - CB)	CATCH BASIN SEE DET 1/L9.20
307 - CB	24.83	INV IN: 21.12 15" RCP (308 - FES) INV IN: 21.12 15" RCP (320 - CB) INV OUT: 21.12 15" RCP (301 - CB)	CATCH BASIN SEE DET 1/L9.20
308 - FES	24.21	INV OUT: 21.22 15" RCP (307 - CB)	FES

STRUCTURE TABLE			
STRUCTURE NAME	STRUCTURE T/C	INVERTS	DESCRIPTION
309 - FES	19.47	INV OUT: 22.00 15" RCP (302 - CB)	FES
310 - AD	24.71	INV OUT: 22.19 12" (303 - CB)	AD
311 - AD	24.76	INV OUT: 22.74 12" (304 - CB)	AD
312 - CB	26.35	INV IN: 21.83 15" RCP (312A-JB) INV OUT: 21.83 15" RCP (320 - CB)	CATCH BASIN SEE DET 1/L9.20
312A-JB	27.73	INV IN: 22.19 15" RCP (313 - CB) INV OUT: 22.19 15" RCP (312 - CB)	MH
313 - CB	26.16	INV IN: 22.46 15" RCP (314 - JB) INV OUT: 22.46 15" RCP (312A-JB)	CATCH BASIN SEE DET 1/L9.20
314 - JB	26.37	INV IN: 23.05 15" RCP (315 - CB) INV IN: 23.30 15" RCP (318 - FES) INV OUT: 23.05 15" RCP (313 - CB)	MH
315 - CB	27.10	INV IN: 23.27 15" RCP (316 - CB) INV OUT: 23.27 15" RCP (314 - JB)	CATCH BASIN SEE DET 1/L9.20
316 - CB	27.06	INV IN: 24.37 12" (317 - AD) INV OUT: 24.12 15" RCP (315 - CB)	CATCH BASIN SEE DET 1/L9.20
317 - AD	26.60	INV OUT: 24.58 12" (316 - CB)	AD
318 - FES	25.49	INV OUT: 23.55 15" RCP (314 - JB)	FES
319 - CB	24.58	INV IN: 20.98 15" RCP (302 - CB) INV OUT: 20.98 15" RCP (301 - CB)	CATCH BASIN SEE DET 1/L9.20
320 - CB	25.94	INV IN: 21.49 15" RCP (312 - CB) INV OUT: 21.49 15" RCP (307 - CB)	CATCH BASIN SEE DET 1/L9.20
401 - CB	26.83	INV IN: 23.23 15" RCP (404 - CB) INV IN: 23.23 15" RCP (402 - CB)	DI
402 - CB	26.72	INV IN: 23.39 15" RCP (403 - CB) INV OUT: 23.39 15" RCP (401 - CB)	CATCH BASIN SEE DET 1/L9.20
403 - CB	27.06	INV OUT: 24.12 15" RCP (402 - CB)	CATCH BASIN SEE DET 1/L9.20
404 - CB	26.80	INV IN: 23.50 15" RCP (416 - FES) INV IN: 23.32 15" RCP (409 - CB) INV OUT: 23.32 15" RCP (401 - CB)	CATCH BASIN SEE DET 1/L9.20
409 - CB	26.92	INV IN: 23.82 15" RCP (415 - FES) INV IN: 23.82 15" RCP (410 - CB) INV OUT: 23.82 15" RCP (404 - CB)	CATCH BASIN SEE DET 1/L9.20
410 - CB	26.90	INV IN: 23.91 15" RCP (411 - CB) INV OUT: 23.91 15" RCP (409 - CB)	CATCH BASIN SEE DET 1/L9.20
411 - CB	27.27	INV IN: 24.33 15" RCP (412 - CB) INV IN: 24.33 15" RCP (414 - FES) INV OUT: 24.33 15" RCP (410 - CB)	CATCH BASIN SEE DET 1/L9.20

STRUCTURE TABLE			
STRUCTURE NAME	STRUCTURE T/C	INVERTS	DESCRIPTION
412 - CB	27.46	INV IN: 24.78 12" (413 - AD) INV OUT: 24.78 15" RCP (411 - CB)	CATCH BASIN SEE DET 1/L9.20
413 - AD	26.77	INV OUT: 24.90 12" (412 - CB)	AD
414 - FES	27.33	INV OUT: 25.39 15" RCP (411 - CB)	FES
415 - FES	26.89	INV OUT: 24.96 15" RCP (409 - CB)	FES
416 - FES	26.85	INV OUT: 24.91 15" RCP (404 - CB)	FES
500 - EX DI	25.54		DI
501 - EX DI	24.84		DI
502 - CB	26.06	INV IN: 21.77 15" RCP (503 - CB) INV OUT: 21.77 15" RCP ()	CATCH BASIN SEE DET 1/L9.20
503 - CB	26.70	INV IN: 22.24 15" RCP (504 - CB) INV IN: 22.49 12" (507 - AD) INV OUT: 22.24 15" RCP (502 - CB)	CATCH BASIN SEE DET 1/L9.20
504 - CB	27.28	INV IN: 23.02 15" RCP (505 - DI) INV OUT: 23.02 15" RCP (503 - CB)	CATCH BASIN SEE DET 1/L9.20
505 - DI	26.34	INV OUT: 23.32 15" RCP (504 - CB)	DI
506 - AD	25.82	INV OUT: 22.22 12" ()	AD
507 - AD	24.66	INV OUT: 22.64 12" (503 - CB)	AD
602 - DI	14.78	INV OUT: 9.24 24" RCP ()	DI
701 - CB	21.12	INV IN: 16.49 15" RCP (702A - CB) INV OUT: 16.49 15" RCP (707 - JB)	CATCH BASIN SEE DET 1/L9.20
702A - CB	20.06	INV IN: 17.13 15" RCP (702B - OSCB) INV OUT: 17.13 15" RCP (701 - CB)	CB
702B - OSCB	20.67	INV IN: 17.73 15" RCP (703 - OSCB) INV OUT: 17.73 15" RCP (702A - CB)	OFFSET CATCH BASIN SEE DETAIL 4/L9.21
703 - OSCB	21.39	INV IN: 18.45 15" RCP (704 - OSCB) INV IN: 18.70 12" (706 - AD) INV OUT: 18.45 15" RCP (702B - OSCB)	OFFSET CATCH BASIN SEE DETAIL 4/L9.21
704 - OSCB	21.75	INV IN: 19.06 12" (705 - AD) INV OUT: 18.81 15" RCP (703 - OSCB)	OFFSET CATCH BASIN SEE DETAIL 4/L9.21
705 - AD	24.38	INV OUT: 19.30 12" (704 - OSCB)	AD

STRUCTURE TABLE			
STRUCTURE NAME	STRUCTURE T/C	INVERTS	DESCRIPTION
706 - AD	20.95	INV OUT: 18.92 12" (703 - OSCB)	AD
707 - JB	19.73	INV IN: 16.27 15" RCP (701 - CB)	MH
801 - OSCB	22.47	INV OUT: 18.08 15" RCP ()	OFFSET CATCH BASIN SEE DETAIL 4/L9.21
OF #1	19.17	INV IN: 14.85 15" RCP (101 - CB)	CB

Pipe Table				
NAME	SIZE	LENGTH	SLOPE	MATERIAL
416 - FES TO 404 - CB	15"	19.43'	7.28%	RCP
415 - FES TO 409 - CB	15"	19.53'	5.81%	RCP
414 - FES TO 411 - CB	15"	19.03'	5.57%	RCP
704 - OSCB TO 703 - OSCB	15"	71.17'	0.51%	RCP
702B - OSCB TO 702A - CB	15"	125.17'	0.48%	RCP
701 - CB TO 707 - JB	15"	38.01'	0.58%	RCP
705 - AD TO 704 - OSCB	12"	11.26'	2.15%	HDPE
703 - OSCB TO 702B - OSCB	15"	148.30'	0.48%	RCP
502 - CB TO 501 - JB	15"	6.06'	0.50%	RCP
503 - CB TO 502 - CB	15"	93.00'	0.50%	RCP
504 - CB TO 503 - CB	15"	156.93'	0.50%	RCP
411 - CB TO 410 - CB	15"	82.94'	0.51%	RCP
409 - CB TO 404 - CB	15"	99.29'	0.50%	RCP
404 - CB TO 401 - CB	15"	16.46'	0.55%	RCP
402 - CB TO 401 - CB	15"	31.49'	0.50%	RCP
403 - CB TO 402 - CB	15"	146.23'	0.50%	RCP
316 - CB TO 315 - CB	15"	168.86'	0.50%	RCP
318 - FES TO 314 - JB	15"	25.48'	1.00%	RCP
314 - JB TO 313 - CB	15"	117.60'	0.50%	RCP
216 - AD TO EX 201 OSCF	12"	14.92'	1.55%	HDPE

Pipe Table				
NAME	SIZE	LENGTH	SLOPE	MATERIAL
210 - CB TO EX 209 OSCB	15"	98.25'	0.52%	RCP
215 - FES TO EX 207 OSCB	15"	20.22'	4.66%	RCP
203 - CB TO EX 202 OSCB	15"	75.75'	1.43%	RCP
204 - CB TO 203 - CB	15"	165.71'	0.50%	RCP
205 - FES TO 204 - CB	12"	18.33'	3.99%	HDPE
110 - AD TO 109 - CB	12"	18.61'	0.54%	HDPE
109 - CB TO 108 - JB	15"	151.43'	0.53%	HDPE
107 - CB TO 106 - CB	15"	124.14'	0.52%	HDPE
105 - CB TO 104 - CB	18"	96.50'	0.52%	RCP
103 - CB TO 102 - CB	18"	200.06'	0.50%	HDPE
113 - AD TO 102 - CB	12"	24.41'	0.60%	HDPE
413 - AD TO 412 - CB	12"	23.76'	0.51%	HDPE
412 - CB TO 411 - CB	15"	89.14'	0.50%	RCP
102 - CB TO 101 - CB	18"	50.68'	0.50%	HDPE
507 - AD TO 503 - CB	12"	21.51'	0.68%	HDPE
505 - DI TO 504 - CB	15"	22.50'	1.33%	RCP
302 - CB TO 319 - CB	15"	42.19'	0.50%	RCP
106 - CB TO 114 - CB	15"	126.17'	0.52%	RCP
111 - AD TO 108 - JB	12"	31.61'	0.63%	HDPE
108 - JB TO 107 - CB	15"	33.06'	0.52%	RCP

Pipe Table				
NAME	SIZE	LENGTH	SLOPE	MATERIAL
112 - AD TO 107 - CB	12"	26.42'	0.58%	HDPE
213 - DI TO 210 - CB	15"	29.55'	1.00%	RCP
212 - AD TO 211 - CB	12"	25.02'	0.50%	HDPE
211 - CB TO 210 - CB	15"	93.13'	0.50%	RCP
311 - AD TO 304 - CB	12"	25.63'	0.80%	HDPE
310 - AD TO 303 - CB	12"	19.96'	1.00%	HDPE
309 - FES TO 302 - CB	15"	19.80'	4.09%	RCP
308 - FES TO 307 - CB	15"	19.30'	0.50%	RCP
317 - AD TO 316 - CB	12"	20.57'	1.00%	HDPE
214 - AD TO EX 208 OSCB	12"	27.39'	5.11%	HDPE
315 - CB TO 314 - JB	15"	44.42'	0.50%	RCP
506 - AD TO 501 - JB	12"	23.04'	1.00%	HDPE
602 - DI TO 601 - EX CB	24"	25.78'	1.50%	RCP
304 - CB TO 303 - CB	15"	108.32'	0.50%	RCP
303 - CB TO 302 - CB	15"	108.88'	0.50%	RCP
307 - CB TO 301 - CB	15"	60.88'	0.50%	RCP
Pipe - (88)	15"	143.47'	1.44%	RCP
306 - CB TO 305 - CB	15"	72.46'	0.50%	RCP
305 - CB TO 304 - CB	15"	51.33'	0.50%	RCP
410 - CB TO 409 - CB	15"	17.70'	0.51%	RCP

Pipe Table				
NAME	SIZE	LENGTH	SLOPE	MATERIAL
104 - CB TO 103 - CB	18"	207.36'	0.50%	HDPE
706 - AD TO 703 - OSCB	12"	13.95'	1.61%	HDPE
801 - OSCB TO OF #8	15"	81.62'	0.46%	RCP
313 - CB TO 312A-JB	15"	37.62'	0.73%	RCP
312 - CB TO 320 - CB	15"	107.75'	0.32%	RCP
114 - CB TO 105 - CB	15"	126.13'	0.52%	HDPE
319 - CB TO 301 - CB	15"	31.93'	0.50%	RCP
320 - CB TO 307 - CB	15"	72.04'	0.50%	RCP
312A-JB TO 312 - CB	15"	51.33'	0.70%	RCP
Pipe - (137)	24"	47.85'	-0.17%	RCP
702 - CB TO 701 - CB (1)	15"	131.61'	0.48%	RCP

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Client:

CITY OF WILMINGTON
NORTH CAROLINA

CITY OF WILMINGTON
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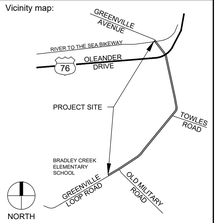
Vicinity map:



Key map:

Seal:

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1240 TODD A. DUNCAN 10.09.2023

Project:

GREENVILLE LOOP TRAIL SECTION 3

Issued for:

BID DOCUMENT SUBMITTAL

No.	Date	Description
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Title:

STORM DRAINAGE TABLES

Project number: L21014
Issued Date: 2025.04.09
Drawn by: DAP
Approved by: JOO
Sheet #: L9.22

\\stewart-eng.local\stewart\PD\Projects\2021\21014 - greenville loop trail section 3\DWGS\3-CDS\Sheets\L21014-L9.22 Storm Drainage Tables.dwg Apr 09, 2025 - 4:44pm

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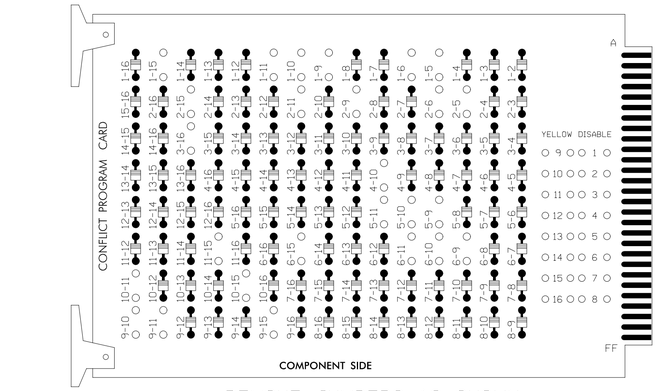
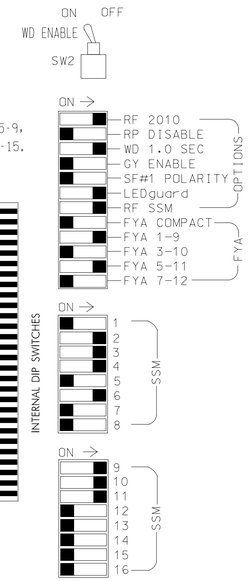
EDI MODEL 2010ECL-NC CONFLICT MONITOR PROGRAMMING DETAIL

(remove jumpers and set switches as shown)

REMOVE DIODE JUMPERS 1-5, 1-6, 1-9, 1-10, 1-11, 1-15, 2-5, 2-6, 2-9, 2-11, 2-15, 3-16, 4-10, 5-9, 5-10, 5-11, 6-9, 6-10, 6-11, 6-15, 9-10, 9-11, 9-15, 10-11, 10-15 AND 11-15.



REMOVE JUMPERS AS SHOWN



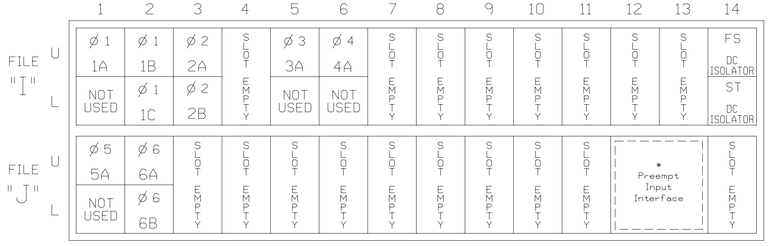
NOTES:

1. Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.
2. Make sure jumpers SEL2-SEL5 are present on the monitor board.

■ = DENOTES POSITION OF SWITCH

INPUT FILE POSITION LAYOUT

(front view)



EX.: 1A, 2A, ETC. = LOOP NO.'S

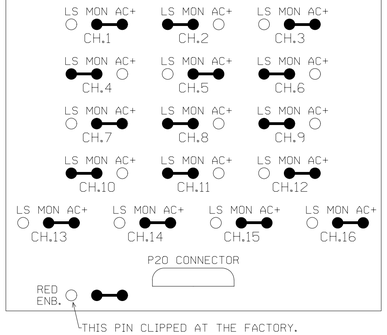
FS = FLASH SENSE
ST = STOP TIME

* See GPS Preemption Installation Note Below.

INPUT FILE POSITION LEGEND: J2L
FILE J
SLOT 2
LOWER

RED MONITOR BOARD PROGRAMMING

(position jumpers as shown below)



THIS PIN CLIPPED AT THE FACTORY.

NOTES

1. To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the Signal Plans.
2. To prevent red failures on unused monitor channels, see Red Monitor Board Programming Detail this sheet.
3. Enable Simultaneous Gap-Out for all phases.
4. Program phases 2 and 6 for Variable Initial and Gap Reduction.
5. Program phases 2 and 6 for Start Up In Green.
6. Program phases 2 and 6 for Yellow Flash, and overlap 1 as Wag Overlaps.
7. The cabinet and controller are part of the Wilmington Signal System.

EQUIPMENT INFORMATION

CONTROLLER.....2070L
CABINET.....332 W/ AUX
SOFTWARE.....ECONOLITE OASIS
CABINET MOUNT.....BASE
OUTPUT FILE POSITIONS...18 WITH AUX. OUTPUT FILE
LOAD SWITCHES USED.....S1,S2,S3,S4,S5,S6,S6P,S8P,S9,S10,S12
PHASES USED.....1,2,3,3PED,4,5,6,6PED
OVERLAP "A".....1+2
OVERLAP "B".....1+4
OVERLAP "C".....5+6
OVERLAP "D".....NOT USED

INPUT FILE CONNECTION & PROGRAMMING CHART

LOOP NO.	LOOP TERMINAL	INPUT FILE POS.	PIN NO.	INPUT ASSIGNMENT NO.	DETECTOR NO.	NEMA PHASE	CALL	EXTEND	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A[1]	TB2-1,2	I1U	56	18	1	1	Y	Y			15
	-	J4U	48	10★	26	6	Y	Y	Y		3
	-	I1U	56	18★	51	1	Y	Y			
**1B	TB2-5,6	I2U	39	1	2	1	Y	Y	-	-	10
**1C	TB2-7,8	I2L	43	5	12	1	Y	Y	-	-	15
2A	TB2-9,10	I3U	63	25	32	2	Y	Y	-	-	-
2B	TB2-11,12	I3L	76	38	42	2	Y	Y	-	-	-
3A	TB4-5,6	I5U	58	20	3	3	Y	Y	-	-	3
4A	TB4-9,10	I6U	41	3	4	4	Y	Y	-	-	3
5A[2]	TB3-1,2	J1U	55	17	5	5	Y	Y			15
	-	I4U	47	9★	22	2	Y	Y	Y		3
	-	J1U	55	17★	55	5	Y	Y			
6A	TB3-5,6	J2U	40	2	6	6	Y	Y	-	-	-
6B	TB3-7,8	J2L	44	6	16	6	Y	Y	-	-	-

** Program detector to cross-switch from calling phase 1 to calling phase 4 during phase 4 green only. See sheet 3 of 3 for programming details.

GPS PREEMPTION INSTALLATION NOTE

Install GPS preemption system. Perform installation according to manufacturer's directions and NCDOT engineer-approved mounting location to accomplish the preemption schemes shown on the signal design plans.

PROJECT REFERENCE NO.	SHEET NO.
	Sig.1.2

SIGNAL HEAD HOOK-UP CHART

LOAD SWITCH NO.	S1	S2	S2P	S3		S4		S4P	S5	S6	S6P	S7	S8	S8P	S9	S10	S11	S12	S13	S14
PHASE	1	2	2 PED	3		4		4 PED	5	6	6 PED	7	8	3 PED	OLA	OLB	SPARE	OLC	OLD	SPARE
SIGNAL HEAD NO.	11★	21,22, 23	NU	31	32	41	42	NU	51★	61,62, 63	P61, P62	NU	NU	P31, P32	11★	12,13	NU	51★	NU	NU
RED		128		116	116	101	101			134						A124				
YELLOW	✳	129		117	117	102	102		✳	135										
GREEN		130		118	118	103	103			136										
RED ARROW															A121			A114		
YELLOW ARROW															A122	A125		A115		
FLASHING YELLOW ARROW															A123			A116		
GREEN ARROW	127			118		103			133							A126				
✋											119			110						
🚶											121			112						

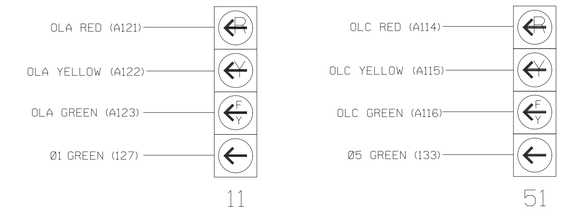
NU = Not Used

✳ Denotes install load resistor. See load resistor installation detail this sheet.

★ See pictorial of head wiring in detail below.

4 SECTION FYA PPLT SIGNAL WIRING DETAIL

(wire signal heads as shown)



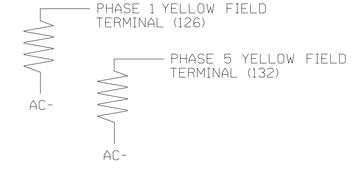
NOTE

1. The sequence display for this signal requires special logic programming. See sheet 2 for programming instructions.

LOAD RESISTOR INSTALLATION DETAIL

(install resistors as shown below)

ACCEPTABLE VALUES	
VALUE (ohms)	WATTAGE
1.5K - 1.9K	25W (min)
2.0K - 3.0K	10W (min)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0052
DESIGNED: January 2024
SEALED: 01/11/2024
REVISED: N/A

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/11/2024
DocuSigned by: Zachary M. Little
ITS & Signals Unit

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Electrical Detail - Sheet 1 of 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for: Transportation Mobility and Safety Division, Department of Transportation, State of North Carolina, ITS & Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 | New Hanover County | Wilmington

PLAN DATE:	January 2024	REVIEWED BY:	
PREPARED BY:	M. L. Stygles	REVIEWED BY:	J. L. Lewis

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATHEW L STYGLES

DocuSigned by: Mathew L Stygles 1/11/2024
SIGNATURE DATE

SIG. INVENTORY NO. 03-0052

DocuSign Envelope ID: B007FBFB-AEB4-4E81-ADD9-A920B97DD6B3

PROJECT REFERENCE NO.	SHEET NO.
	Sig.1.3

LOGICAL I/O PROCESSOR PROGRAMMING DETAIL

TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE, AND TO SUPRESS FYA DURING LPI

(program controller as shown below)

1. FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5, 6 AND 7.

2. FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

```
  LOGICAL I/O COMMAND #1  (+/-COMMAND#)
IF  ACTIVE PHASE       #1  IS ON
AND RED CLEAR ON PHASE #1  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #50 ON
 SET OUTPUT  ASSIGNMENT #51 OFF
```

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

PRESS '+'

```
  LOGICAL I/O COMMAND #2  (+/-COMMAND#)
IF  ACTIVE PHASE       #1  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #52 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

PRESS '+'

```
  LOGICAL I/O COMMAND #3  (+/-COMMAND#)
IF  YELLOW ON PHASE    #1  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #51 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

PRESS '+'

```
  LOGICAL I/O COMMAND #4  (+/-COMMAND#)
IF  ACTIVE PHASE       #5  IS ON
AND RED CLEAR ON PHASE #5  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #42 ON
 SET OUTPUT  ASSIGNMENT #43 OFF
```

PHASE 5 RED CLEAR WHEN TRANSITIONING FROM PHASE 5 TO PHASE 6 (HEAD 51).

PRESS '+'

```
  LOGICAL I/O COMMAND #5  (+/-COMMAND#)
IF  ACTIVE PHASE       #5  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #44 OFF
```

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 5 (HEAD 51).

PRESS '+'

```
  LOGICAL I/O COMMAND #6  (+/-COMMAND#)
IF  YELLOW ON PHASE    #5  IS ON

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #43 ON
```

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 5 (HEAD 51).

PRESS '+'

```
  LOGICAL I/O COMMAND #7 (+/-COMMAND#)
IF  OUTPUT ASSIGNMENT #26 IS ON
AND OUTPUT ASSIGNMENT #29 IS OFF

          SCROLL DOWN

 THEN:
 SET OUTPUT  ASSIGNMENT #44 OFF
 SET OUTPUT  ASSIGNMENT #43 OFF
 SET OUTPUT  ASSIGNMENT #42 ON
```

NOTE: LOGIC STATEMENT FOR ADVANCE WALK WITH FYAs. TURN FYA HEAD 51 OFF DURING PED 6 ADVANCE WALK.

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

OUTPUT REFERENCE SCHEDULE

OUTPUT 26 = Phase 6 Walk
OUTPUT 29 = Vehicle 6 Green
OUTPUT 42 = Overlap C Red
OUTPUT 43 = Overlap C Yellow
OUTPUT 44 = Overlap C Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

FLASHER CIRCUIT MODIFICATION DETAIL

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

```
 PAGE 1: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |XX
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

PRESS '+' ONCE

```
 PAGE 1: VEHICLE OVERLAP 'B' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |X  X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

PRESS '+' ONCE

```
 PAGE 1: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |  XX
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  X GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS). PRESS 'NEXT' TO ADVANCE TO PAGE 2.

NOTICE PAGE 2

```
 PAGE 2: VEHICLE OVERLAP 'A' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

PRESS '+' ONCE

NOTICE PAGE 2

```
 PAGE 2: VEHICLE OVERLAP 'B' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |X  X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...N
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

PRESS '+' ONCE

NOTICE PAGE 2

```
 PAGE 2: VEHICLE OVERLAP 'C' SETTINGS
 PHASE:          |1234567891011121314151 6
VEH OVL PARENTS: |  X
VEH OVL NOT VEH: |
VEH OVL NOT PED: |
VEH OVL GRN EXT: |
STARTUP COLOR: _ RED  _ YELLOW  _ GREEN
FLASH COLORS:  _ RED  _ YELLOW  _ GREEN
SELECT VEHICLE OVERLAP OPTIONS:   (Y/N)
FLASH YELLOW IN CONTROLLER FLASH?...Y
GREEN EXTENSION (0-255 SEC).........0
YELLOW CLEAR (0=PARENT,3-25.5 SEC)..0.0
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0
OUTPUT AS PHASE # (0=NONE, 1-16)....0
```

OVERLAP PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0052
DESIGNED: January 2024
SEALED: 01/11/2024
REVISED: N/A

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/11/2024
DocuSigned by: Ludwig M. Kittle
ITS & Signals Unit

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940 Main Campus Drive, Suite 500
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919.829.0328

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for: NC Department of Transportation Mobility and Safety Division Traffic Engineering Branch Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 | New Hanover County | Wilmington

PLAN DATE:	January 2024	REVIEWED BY:	
PREPARED BY:	M. L. Stygles	REVIEWED BY:	J. L. Lewis

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATTHEW L. STYGLES
DocuSigned by: Matthew L. Stygles 1/11/2024
304B61B84F7446E... DATE

SIG. INVENTORY NO. 03-0052

DocuSign Envelope ID: B007FBFB-AEB4-4E81-ADD9-A920B97DD6B3

VEHICLE DETECTOR SWITCHING PROGRAMMING DETAILS

(program controller as shown below)

1. FROM MAIN MENU PRESS '7' (DETECTORS), THEN '1' (VEHICLE DETECTOR ASSIGNMENTS).

2. USING (+ −) SCROLL UP OR DOWN UNTIL THE DESIRED VEHICLE DETECTOR # IS FOUND.

3. ENABLE THE 'SWITCHING DETECTOR' FEATURE AS SHOWN BELOW AND ACTIVATE THE ASSIGNED PHASE AND THE SWITCHING PHASE AS INDICATED UNDER 'PHASE #'.

LOOP `1B':

```
VEHICLE DETECTOR #2 SETTINGS (+ -,1-64)

SETTING:                              (Y/N)
ENABLE DETECTOR.....................Y
ENABLE LOGGING......................Y
ENABLE DIAGNOSTICS..................Y
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................Y
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........Y
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#           |123456789101112131415 16
PHASES ASSIGNED  |X
SWITCH/DUPLICATE |   X
LOOP SIZE (0-255 FT).................40
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................10
MAX CALLS/MINUTE (0-255)............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%)..............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

LOOP `1C':

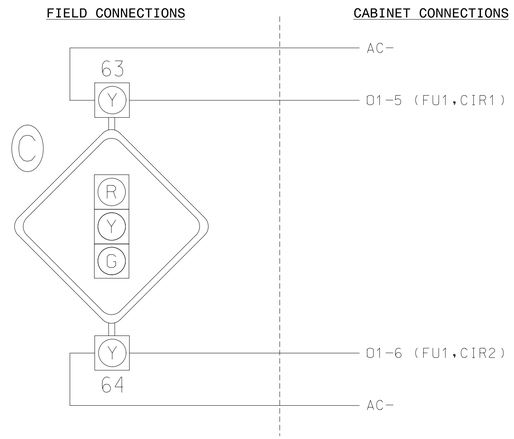
```
VEHICLE DETECTOR #12 SETTINGS (+ -,1-64)

SETTING:                              (Y/N)
ENABLE DETECTOR.....................Y
ENABLE LOGGING......................Y
ENABLE DIAGNOSTICS..................Y
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................Y
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........Y
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#           |123456789101112131415 16
PHASES ASSIGNED  |X
SWITCH/DUPLICATE |   X
LOOP SIZE (0-255 FT).................40
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................15
MAX CALLS/MINUTE (0-255)............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%)..............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

--NOTE--

THE PROGRAMMING SHOWN ABOVE IS NECESSARY IN ORDER FOR LOOPS '1B' AND '1C' TO CALL PHASE 8 ONLY DURING PHASE 8 GREEN, AND TO CALL PHASE 1 AT ALL OTHER TIMES.

BEACON WIRING DETAIL

(wire flasher as shown below)



THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0052
DESIGNED: January 2024
SEALED: 01/11/2024
REVISED: N/A

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/11/2024
DocuSigned by: Zachary M. Little
ITS & Signals Unit

Electrical Detail - Sheet 3 of 7

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919.829.0328

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for: NC Department of Transportation Mobility and Safety Division Traffic Engineering Branch Signals Management Section

750 N.Greenfield Pkwy,Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 | New Hanover County | Wilmington

PLAN DATE: January 2024	REVIEWED BY:		
PREPARED BY: M. L. Stygles	REVIEWED BY: J. L. Lewis		

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATTHEW L. STYGLES
DocuSigned by: Matthew L. Stygles
SIGNATURE
1/11/2024
DATE

SIG. INVENTORY NO. 03-0052

DocuSign Envelope ID: B007FBFB-AEB4-4E81-ADD9-A920B97DD6B3

EMERGENCY VEHICLE PREEMPTION PROGRAMMING DETAIL

(program controller as shown below)

From Main Menu press 'A' (Preemption), then '1' (Standard Preemptions). Press 'NEXT' as needed to advance to Preempt 3.

```
   PREEMPTION  #3  SETTINGS (NEXT:1-10)
INTERVAL/TIMING  |  CLEAR/DWELL PHASES
  GRN YEL  RED   |12345678910111213141516
1 255  0.0  0.0  | X  X
2   0  0.0  0.0  |
3   0  0.0  0.0  |
4   0  0.0  0.0  |
5   1  0.0  0.0  | X   X
EXIT CALLS       |
          OPTIONS
PRIORITY (Y/N TO SELECT) ............MED
DELAY TIMER (0-255 SEC) .............0
MIN GREEN BEFORE PRE (0= DEFAULT)....1
PED CLEAR BEFORE PRE (0= DEFAULT)....0
YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0
RED CLEAR BEFORE PRE (0= DEFAULT)....0.0
DWELL MIN TIMER (0-255 SEC) .........12
DWELL MAX TIMER (0=OFF,1-255MIN) ....2
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
LINK TO NEXT PREEMPT? ...............N
ENABLE BACKUP PROTECTION? ...........N
HOLD CLEAR 1 PHASES DURING DELAY? ...N
FAST GREEN FLASH DWELL PHASES? ......N
PED CLEARANCE THROUGH YELLOW? .......N
INHIBIT OVERLAP GREEN EXTENSION? ....N
SERVICE DURING SOFTWARE FLASH? ......N
REST IN RED DURING DWELL INTERVAL? ..N
FLASH DWELL INTERVAL? ...............N
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............N
OVERLAPS:                | ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW   |
OMIT OVERLAPS:           |
```

PRESS 'NEXT '

```
   PREEMPTION  #4  SETTINGS (NEXT:1-10)
INTERVAL/TIMING  |  CLEAR/DWELL PHASES
  GRN YEL  RED   |12345678910111213141516
1 255  0.0  0.0  |X    X
2   0  0.0  0.0  |
3   0  0.0  0.0  |
4   0  0.0  0.0  |
5   1  0.0  0.0  | X   X
EXIT CALLS       |
          OPTIONS
PRIORITY (Y/N TO SELECT) ............MED
DELAY TIMER (0-255 SEC) .............0
MIN GREEN BEFORE PRE (0= DEFAULT)....1
PED CLEAR BEFORE PRE (0= DEFAULT)....0
YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0
RED CLEAR BEFORE PRE (0= DEFAULT)....0.0
DWELL MIN TIMER (0-255 SEC) .........12
DWELL MAX TIMER (0=OFF,1-255MIN) ....2
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
LINK TO NEXT PREEMPT? ...............N
ENABLE BACKUP PROTECTION? ...........N
HOLD CLEAR 1 PHASES DURING DELAY? ...N
FAST GREEN FLASH DWELL PHASES? ......N
PED CLEARANCE THROUGH YELLOW? .......N
INHIBIT OVERLAP GREEN EXTENSION? ....N
SERVICE DURING SOFTWARE FLASH? ......N
REST IN RED DURING DWELL INTERVAL? ..N
FLASH DWELL INTERVAL? ...............N
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............N
OVERLAPS:                | ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW   |
OMIT OVERLAPS:           |  X
```

PRESS 'NEXT '

```
   PREEMPTION  #5  SETTINGS (NEXT:1-10)
INTERVAL/TIMING  |  CLEAR/DWELL PHASES
  GRN YEL  RED   |12345678910111213141516
1 255  0.0  0.0  |  X
2   0  0.0  0.0  |
3   0  0.0  0.0  |
4   0  0.0  0.0  |
5   1  0.0  0.0  |  X
EXIT CALLS       |
          OPTIONS
PRIORITY (Y/N TO SELECT) ............MED
DELAY TIMER (0-255 SEC) .............0
MIN GREEN BEFORE PRE (0= DEFAULT)....1
PED CLEAR BEFORE PRE (0= DEFAULT)....0
YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0
RED CLEAR BEFORE PRE (0= DEFAULT)....0.0
DWELL MIN TIMER (0-255 SEC) .........5
DWELL MAX TIMER (0=OFF,1-255MIN) ....2
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
LINK TO NEXT PREEMPT? ...............N
ENABLE BACKUP PROTECTION? ...........N
HOLD CLEAR 1 PHASES DURING DELAY? ...N
FAST GREEN FLASH DWELL PHASES? ......N
PED CLEARANCE THROUGH YELLOW? .......N
INHIBIT OVERLAP GREEN EXTENSION? ....N
SERVICE DURING SOFTWARE FLASH? ......N
REST IN RED DURING DWELL INTERVAL? ..N
FLASH DWELL INTERVAL? ...............N
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............N
OVERLAPS:                | ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW   |
OMIT OVERLAPS:           |
```

PRESS 'NEXT '

```
   PREEMPTION  #6  SETTINGS (NEXT:1-10)
INTERVAL/TIMING  |  CLEAR/DWELL PHASES
  GRN YEL  RED   |12345678910111213141516
1 255  0.0  0.0  |   X
2   0  0.0  0.0  |
3   0  0.0  0.0  |
4   0  0.0  0.0  |
5   1  0.0  0.0  |   X
EXIT CALLS       |
          OPTIONS
PRIORITY (Y/N TO SELECT) ............MED
DELAY TIMER (0-255 SEC) .............0
MIN GREEN BEFORE PRE (0= DEFAULT)....1
PED CLEAR BEFORE PRE (0= DEFAULT)....0
YELLOW CLEAR BEFORE PRE (0= DEFAULT).0.0
RED CLEAR BEFORE PRE (0= DEFAULT)....0.0
DWELL MIN TIMER (0-255 SEC) .........12
DWELL MAX TIMER (0=OFF,1-255MIN) ....2
DWELL HOLD-OVER TIMER (0-255) .......0
LATCH CALL? .........................N
LINK TO NEXT PREEMPT? ...............N
ENABLE BACKUP PROTECTION? ...........N
HOLD CLEAR 1 PHASES DURING DELAY? ...N
FAST GREEN FLASH DWELL PHASES? ......N
PED CLEARANCE THROUGH YELLOW? .......N
INHIBIT OVERLAP GREEN EXTENSION? ....N
SERVICE DURING SOFTWARE FLASH? ......N
REST IN RED DURING DWELL INTERVAL? ..N
FLASH DWELL INTERVAL? ...............N
ALLOW PEDS IN DWELL INTERVAL? .......N
RE-TIME DWELL INTERVAL? .............N
OVERLAPS:                | ABCDEFGHIJKLMNOP
DWELL INT FLASH YELLOW   |
OMIT OVERLAPS:           |
```

PROGRAMMING COMPLETE

PROGRAM EXTEND TIME ON GPS DETECTOR UNIT FOR 2.0 SEC.

PROJECT REFERENCE NO.	SHEET NO.
	Sig.1.5

PED 3 PROGRAMMING DETAIL

(program controller as shown below)

CHANGING OUTPUT ASSIGNMENTS

1. FROM MAIN MENU SELECT '6' (OUTPUTS), THEN '1' (OUTPUT ASSIGNMENTS)
2. ENTER 17 (PHASE 8 DW) FOR OUTPUT ASSIGNMENT #.
3. SCROLL DOWN TO 'PEDESTRIAN PHASE' AND ENTER 'Y' REGARDLESS OF DEFAULT PROGRAMMING
4. ENTER '3' FOR 'SELECT PEDESTRIAN PHASE'. NO CHANGE NEEDED FOR 'SELECT COLOR'
5. BACKUP TO 'OUTPUT ASSIGNMENTS AND SETTINGS MENU:' BY PRESSING THE 'ESC' BUTTON ON KEYBOARD.
6. SELECT '1' (OUTPUT ASSIGNMENTS)
7. ENTER 18 (PHASE 8 W) FOR OUTPUT ASSIGNMENT #.
8. REPEAT STEPS # 3 AND # 4.

CHANGING INPUT ASSIGNMENTS

1. FROM MAIN MENU SELECT '7' (DETECTORS), THEN '2' (PEDESTRIAN DETECTOR ASSIGNMENTS)
2. CYCLE TO PED DETECTOR #8 BY REPEATEDLY DEPRESSING '+' KEY
3. MODIFY PHASE ASSIGNED TO PED DETECTOR # 8 FROM PHASE 8 TO PHASE 3

PROGRAMMING COMPLETE

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0052
DESIGNED: January 2024
SEALED: 01/11/2024
REVISED: N/A

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/11/2024
DocuSigned by: Zachary M. Little
ITS & Signals Unit

Electrical Detail - Sheet 4 of 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for: Mobility and Safety Division, Traffic Engineering Branch, Department of Transportation, State of North Carolina, Signal Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 | New Hanover County | Wilmington

PLAN DATE:	January 2024	REVIEWED BY:	
PREPARED BY:	M. L. Stygles	REVIEWED BY:	J. L. Lewis

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATTHEW L. STYGLES
DocuSigned by: Matt L Stygles 1/11/2024
DATE
SIG. INVENTORY NO. 03-0052

DocuSign Envelope ID: B007FBFB-AEB4-4E81-ADD9-A920B97DD6B3

PROJECT REFERENCE NO.	SHEET NO.
	Sig.1.6

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 1A

(program controller as shown below)

NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.

2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #10 (DETECTOR 26) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 6 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 51 TO INPUT #18 SO THAT THE DELAY ON LOOP 1A CAN BE REDUCED FROM 15 SECONDS TO 3 SECONDS.

FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 10 IS REACHED.

```
PAGE: 2 C1 PIN:48  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................10
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................Y
VEHICLE DETECTOR (1-64).............26
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10).............._
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................._
DOOR OPEN (Y/N)......................_
MANUAL CONTROL ENABLE (Y/N).........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)......_
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

→ ENTER A 'Y' FOR NOT ENABLED →

DEFAULT DETECTOR NUMBER WILL REMAIN UNTIL 'NOT ENABLED' IS ENTERED.

(LOOP 1A - PHASE 6)

```
PAGE: 2 C1 PIN:48  NOT ENABLED
INPUT ASSIGNMENT #.................10
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................Y
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10).............._
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................._
DOOR OPEN (Y/N)......................_
MANUAL CONTROL ENABLE (Y/N).........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)......_
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

PRESS '+' TO ADVANCE TO INPUT 18

```
PAGE: 2 C1 PIN:56  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................18
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................._
VEHICLE DETECTOR (1-64).............1
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10).............._
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................._
DOOR OPEN (Y/N)......................_
MANUAL CONTROL ENABLE (Y/N).........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)......_
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

→ ENTER '51' TO REASSIGN THE VEHICLE DETECTOR FOR THIS INPUT →

(LOOP 1A - PHASE 1)

```
PAGE: 2 C1 PIN:56  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................18
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................._
VEHICLE DETECTOR (1-64).............51
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16)......._
PREEMPT (1-10)......................._
INVERTED PREEMPT (1-10).............._
STOP TIME (Y/N)......................_
FLASH SENSE (Y/N)...................._
DOOR OPEN (Y/N)......................_
MANUAL CONTROL ENABLE (Y/N).........._
MANUAL CONTROL ADVANCE (Y/N)........_
SPECIAL FUNCTION ALARM (1-8)........_
TOD HOUR SYCHRONIZATION (0-23)......_
FORCE OFF RING (1-4)................_
HOLD PHASES (1-16)..................._
PLAN (65=FLSH,66=FREE)..._  OFFSET#.._
CHANGE PHASE SEQUENCE PAGE (1-12)...._
CHANGE PHASE TIMING PAGE (1-4)......_
CHANGE PHASE CONTROL PAGE (1-4)......_
CHANGE OVERLAP CONTROL PAGE (1-4)...._
CHANGE INPUT PAGE (1-4).............._
CHANGE OUTPUT PAGE (1-4)............._
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

PROGRAMMING COMPLETE

SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 1A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #51.

```
VEHICLE DETECTOR #51  SETTINGS (+-,1-64)
SETTING:                          (Y/N)
ENABLE DETECTOR....................N
ENABLE LOGGING.....................N
ENABLE DIAGNOSTICS.................N
SPEED TRAP.........................N
CALL DETECTOR......................Y
EXTENSION DETECTOR.................Y
MODE 2 STOP BAR....................N
SWITCHING DETECTOR.................N
DUPLICATING DETECTOR...............N
ENABLE FULL TIME DELAY.............N
IF FAILED, SET MIN RECALL?.........N
IF FAILED, SET MAX1 RECALL?........N
IF FAILED, SET MAX2 RECALL?........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT).................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)..............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%).............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

→ ENTER 'Y' FOR ENABLE DETECTOR →

→ ENTER '1' FOR PHASES ASSIGNED →

→ ENSURE DELAY IS '3' →

```
VEHICLE DETECTOR #51  SETTINGS (+-,1-64)
SETTING:                          (Y/N)
ENABLE DETECTOR....................Y
ENABLE LOGGING.....................N
ENABLE DIAGNOSTICS.................N
SPEED TRAP.........................N
CALL DETECTOR......................Y
EXTENSION DETECTOR.................Y
MODE 2 STOP BAR....................N
SWITCHING DETECTOR.................N
DUPLICATING DETECTOR...............N
ENABLE FULL TIME DELAY.............N
IF FAILED, SET MIN RECALL?.........N
IF FAILED, SET MAX1 RECALL?........N
IF FAILED, SET MAX2 RECALL?........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦X
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT).................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................3
MAX CALLS/MIN (0-255)..............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%).............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

DETECTOR PROGRAMMING COMPLETE

NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0052
DESIGNED: January 2024
SEALED: 01/11/2024
REVISED: N/A

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/11/2024
DocuSigned by: Evelyn M. Tuttle
ITS & Signals Unit

Electrical Detail - Sheet 5 of 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for: NC Transportation Mobility and Safety Division, Traffic Engineering Branch, Signals Management Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 | New Hanover County | Wilmington

PLAN DATE:	January 2024	REVIEWED BY:	
PREPARED BY:	M. L. Stygles	REVIEWED BY:	J. L. Lewis

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATTHEW L STYGLES
DocuSigned by: Matthew L Stygles 1/11/2024
SIGNATURE DATE
SIG. INVENTORY NO. 03-0052

1/11/2024
03005223_ele_20220823.dgn
mstygles

DocuSign Envelope ID: B007FBFB-AEB4-4E81-ADD9-A920B97DD6B3

PROJECT REFERENCE NO.	SHEET NO.
	Sig.1.7

INPUT PAGE 2 ASSIGNMENT PROGRAMMING DETAIL FOR ALTERNATE PHASING - LOOP 5A

(program controller as shown below)

NOTES: 1. THIS PROGRAMMING APPLIES FOR INPUT PAGE 2 ONLY. INPUT PAGE 1 WILL USE STANDARD DEFAULT SETTINGS. THIS PROGRAMMING IS NECESSARY FOR PROPER DETECTOR OPERATION DURING ALTERNATE PHASING OPERATION.

2. THE FIRST TASK THIS PROGRAMMING ACCOMPLISHES IS THE DISABLING OF INPUT #9 (DETECTOR 22) SO THAT A VEHICLE CALL WILL NOT BE PLACED TO PHASE 2 DURING ALTERNATE PHASING OPERATION. THE SECOND TASK THIS PROGRAMMING ACCOMPLISHES IS THAT IT REASSIGNS DETECTOR 55 TO INPUT #17 SO THAT THE DELAY ON LOOP 5A CAN BE REDUCED FROM 15 SECONDS TO 3 SECONDS.

FROM MAIN MENU PRESS '5' (INPUTS), THEN PRESS 'NEXT' TO GET TO INPUT PAGE '2'. PRESS THE '+' KEY UNTIL INPUT 9 IS REACHED.

```
PAGE: 2 C1 PIN:47  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................9
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................Y
VEHICLE DETECTOR (1-64).............22
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYCHRONIZATION (0-23)......
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

→ ENTER A 'Y' FOR NOT ENABLED

DEFAULT DETECTOR NUMBER WILL REMAIN UNTIL 'NOT ENABLED' IS ENTERED.

(LOOP 5A - PHASE 2)

→

```
PAGE: 2 C1 PIN:47  NOT ENABLED
INPUT ASSIGNMENT #.................9
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................Y
VEHICLE DETECTOR (1-64).............._
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYCHRONIZATION (0-23)......
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

PRESS '+' TO ADVANCE TO INPUT 17

```
PAGE: 2 C1 PIN:55  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................17
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................._
VEHICLE DETECTOR (1-64).............5
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYCHRONIZATION (0-23)......
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

→ ENTER '55' TO REASSIGN THE VEHICLE DETECTOR FOR THIS INPUT

(LOOP 5A - PHASE 5)

→

```
PAGE: 2 C1 PIN:55  VEHICLE DETECTOR
INPUT ASSIGNMENT #.................17
DEBOUNCE TIME (0-25.5 SEC).........0.5
DELAY TIME (0-25.5 SEC).............0.0
HOLD-OVER TIME (0-25.5 SEC).........0.0
ASSIGNMENT SELECTION:
NOT ENABLED (Y/N)..................._
VEHICLE DETECTOR (1-64).............55
PEDESTRIAN DETECTOR (1-16).........._
ALTERNATE PED DETECTOR (1-16).......
PREEMPT (1-10).....................
INVERTED PREEMPT (1-10).............
STOP TIME (Y/N).....................
FLASH SENSE (Y/N)...................
DOOR OPEN (Y/N).....................
MANUAL CONTROL ENABLE (Y/N).........
MANUAL CONTROL ADVANCE (Y/N)........
SPECIAL FUNCTION ALARM (1-8)........
TOD HOUR SYCHRONIZATION (0-23)......
FORCE OFF RING (1-4)................
HOLD PHASES (1-16)..................
PLAN (65=FLSH,66=FREE)..._  OFFSET#..
CHANGE PHASE SEQUENCE PAGE (1-12)...
CHANGE PHASE TIMING PAGE (1-4)......
CHANGE PHASE CONTROL PAGE (1-4).....
CHANGE OVERLAP CONTROL PAGE (1-4)...
CHANGE INPUT PAGE (1-4).............
CHANGE OUTPUT PAGE (1-4)............
OVERRIDE PHASE CONTROL FUNCTION (Y)._
```

PROGRAMMING COMPLETE

SPECIAL DETECTOR PROGRAMMING DETAIL - LOOP 5A (ALT.)

(program controller as shown below)

FROM MAIN MENU PRESS '7' (DETECTORS), THEN PRESS '1' FOR VEHICLE DETECTORS. PRESS THE '-' KEY TO GET TO VEHICLE DETECTOR #55.

```
VEHICLE DETECTOR #55  SETTINGS (+=,1-64)
SETTING:                          (Y/N)
ENABLE DETECTOR.....................N
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT).................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................0
MAX CALLS/MIN (0-255)..............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%).............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

→ ENTER 'Y' FOR ENABLE DETECTOR →

→ ENTER '5' FOR PHASES ASSIGNED →

→ ENSURE DELAY IS '3' →

```
VEHICLE DETECTOR #55  SETTINGS (+=,1-64)
SETTING:                          (Y/N)
ENABLE DETECTOR.....................Y
ENABLE LOGGING......................N
ENABLE DIAGNOSTICS..................N
SPEED TRAP..........................N
CALL DETECTOR.......................Y
EXTENSION DETECTOR..................Y
MODE 2 STOP BAR.....................N
SWITCHING DETECTOR..................N
DUPLICATING DETECTOR................N
ENABLE FULL TIME DELAY..............N
IF FAILED, SET MIN RECALL?..........N
IF FAILED, SET MAX1 RECALL?.........N
IF FAILED, SET MAX2 RECALL?.........N
PHASE#          ¦12345678910111213141516
PHASES ASSIGNED ¦    X
SWITCH/DUPLICATE¦
LOOP SIZE (0-255 FT).................6
SPEED TRAP DISTANCE (0-255 FT)......0
STOP BAR TIME (0-255 SEC)...........0
STRETCH (0-25.5 SEC)................0.0
DELAY (0-255 SEC)...................3
MAX CALLS/MIN (0-255)..............255
MIN CALLS/DIAGNOSTIC PERIOD (0-255).0
MAX OCCUPANCY (0-100%).............100
EXTENSION DISABLE TIME (0-255 SEC)..0
QUEUE MAX OCCUPANCY TIME (0-255)....0
QUEUE GAP RESET TIME (0-25.5).......0.0
PREEMPTION INDEX FOR QUEUE (0-10)...0
```

DETECTOR PROGRAMMING COMPLETE

NOTE: DETECTOR IS PROGRAMMED PER THE INPUT FILE CONNECTION AND PROGRAMMING CHART SHOWN ON SHEET 1.

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0052
DESIGNED: January 2024
SEALED: 01/11/2024
REVISED: N/A

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/11/2024
DocuSigned by: Zachary M. Little
ITS & Signals Unit

Electrical Detail - Sheet 6 of 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
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919.829.0328

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for: NC Department of Transportation, Mobility and Safety Division, ITS & Signals Management Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 | New Hanover County | Wilmington

PLAN DATE:	January 2024	REVIEWED BY:	
PREPARED BY:	M. L. Styles	REVIEWED BY:	J. L. Lewis

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATTHEW L. STYGLES
DocuSigned by: Matthew L. Styles 1/11/2024
394B6B84A9746KE...
SIG. INVENTORY NO. 03-0052

1/11/2024
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mstygles

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PROJECT REFERENCE NO.	SHEET NO.
	Sig.1.8

ALTERNATE PHASING ACTIVATION DETAIL

TO RUN ALT. PHASING DURING COORDINATION - SELECT ALL PAGE CHANGES (AS SHOWN BELOW) WITHIN COORDINATION PLAN PROGRAMMING.

TO RUN ALT. PHASING DURING FREE RUN - PROGRAM PAGE CHANGES (SHOWN BELOW) IN SEPARATE TIME OF DAY EVENTS. IF PAGE 1 IS USED, NO EVENT PROGRAMMING IS NECESSARY FOR THAT PARTICULAR PAGE.

PHASING	INPUTS PAGE	OVERLAPS PAGE
ACTIVE PAGES REQUIRED TO RUN DEFAULT PHASING	1	1
ACTIVE PAGES REQUIRED TO RUN ALTERNATE PHASING	2	2

NOTE: PAGES NOT SHOWN (i.e. sequence, phase control, etc.) SHOULD REMAIN AS '1', OR AS DEFINED BY TIMING ENGINEER.

IMPORTANT: IF ALT. PHASING IS USED DURING FREE RUN AND COORDINATION, DO NOT OPERATE TIME OF DAY PAGE CHANGE EVENTS CONCURRENTLY WITH COORDINATION PLAN EVENTS IN THE EVENT SCHEDULER. (EX. FREE RUN PAGE CHANGE EVENT SHOULD END BEFORE COORDINATION PLAN EVENT STARTS AND VICE-VERSA).

ALTERNATE PHASING PAGE CHANGE SUMMARY

THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN THESE OVERLAP/INPUT PAGE CHANGES ACTIVATE TO CALL THE "ALTERNATE PHASING":

OVERLAPS PAGE 2: Modifies overlap parent phases for heads 11 and 51 to run protected turns only.

INPUTS PAGE 2: Disables phase 6 call on loop 1A and reduces delay time for phase 1 call on loop 1A to 3 seconds.

Disables phase 2 call on loop 5A and reduces delay time for phase 5 call on loop 5A to 3 seconds.

THIS ELECTRICAL DETAIL IS FOR
THE SIGNAL DESIGN: 03-0052
DESIGNED: January 2024
SEALED: 01/11/2024
REVISED: N/A

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/11/2024
DocuSigned by: Zachary M. Little
ITS & Signals Unit

Electrical Detail - Sheet 7 of 7

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

ELECTRICAL AND PROGRAMMING DETAILS FOR:

Prepared for: NC Transportation Mobility and Safety Division, Traffic Engineering Branch, Department of Transportation, Traffic & Signals Management Section
750 N.Greenfield Pkwy.Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 | New Hanover County | Wilmington

PLAN DATE:	January 2024	REVIEWED BY:	
PREPARED BY:	M. L. Stygles	REVIEWED BY:	J. L. Lewis

REVISIONS	INIT.	DATE

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATTHEW L STYGLES
DocuSigned by: Matthew L. Stygles 1/11/2024
SIGNATURE & REG. DATE

SIG. INVENTORY NO. 03-0052

1/11/2024
03005223_sht_ele_20220823.dgn
mstygles

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PROJECT REFERENCE NO.	SHEET NO.
	Sig.1.0

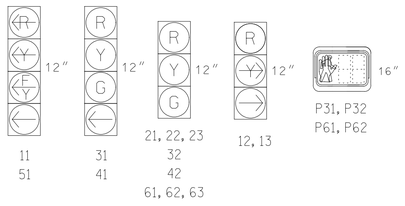
OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING						
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X40	0	2-4-2	-	1	Y	Y	-	-	10	-	-
					6	Y	Y	Y	-	3	-	-
1B*	6X40	0	EXIST	-	1	Y	Y	-	-	10	-	-
1C*	6X40	0	EXIST	-	1	Y	Y	-	-	15	-	-
2A	6X6	290	5	-	2	Y	Y	-	-	-	-	-
2B	6X6	290	5	-	2	Y	Y	-	-	-	-	-
3A	6X40	0	2-4-2	-	3	Y	Y	-	-	3	-	-
4A	6X40	0	EXIST	-	4	Y	Y	-	-	3	-	-
5A	6X40	0	2-4-2	-	5	Y	Y	-	-	10	-	-
					2	Y	Y	Y	-	3	-	-
6A	6X6	300	5	-	6	Y	Y	-	-	-	-	-
6B	6X6	300	5	-	6	Y	Y	-	-	-	-	-

*Program detector to cross-switch from calling Phase 1 to calling Phase 4 during Phase 4 Green only.

SIGNAL FACE I.D.

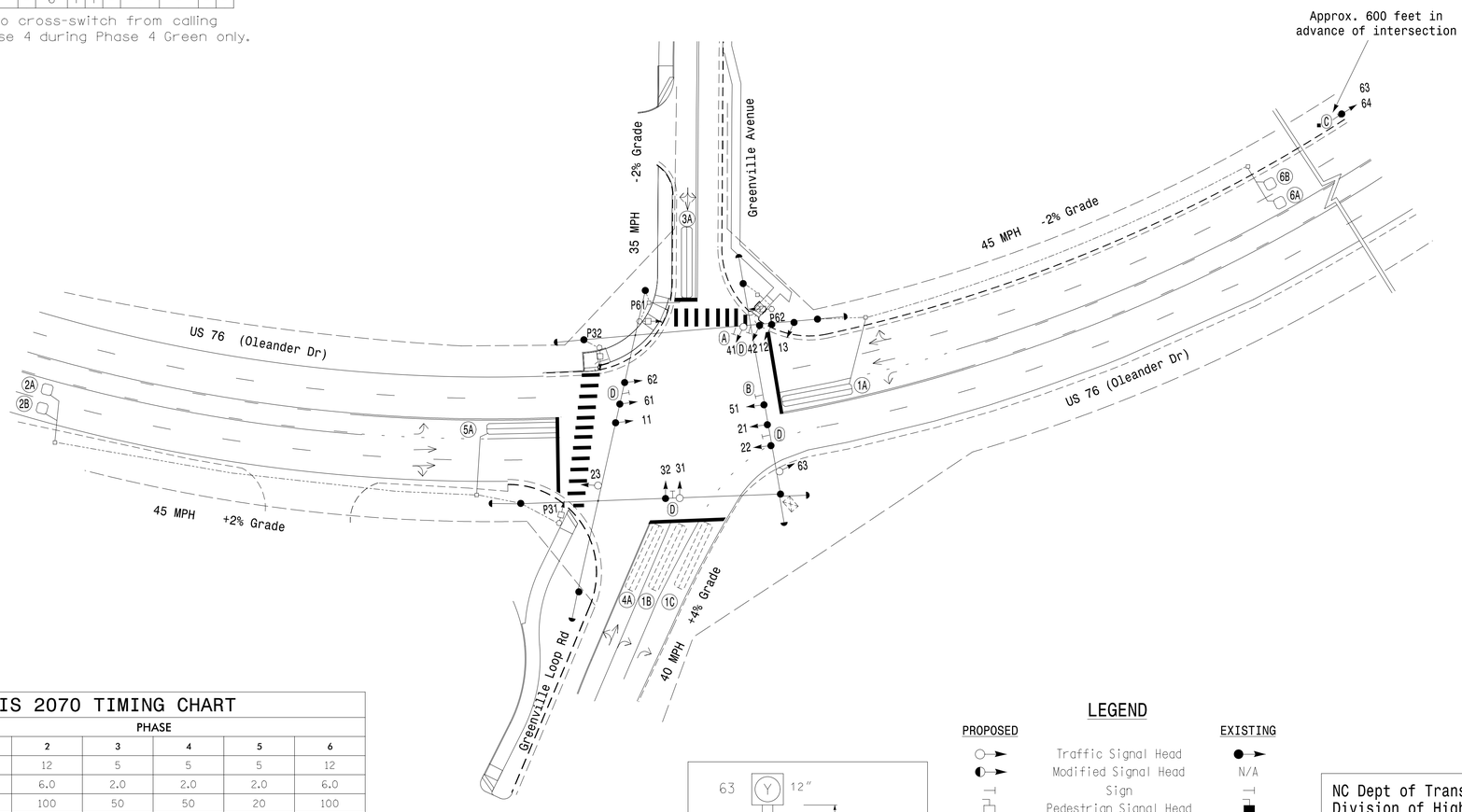
All Heads L.E.D.



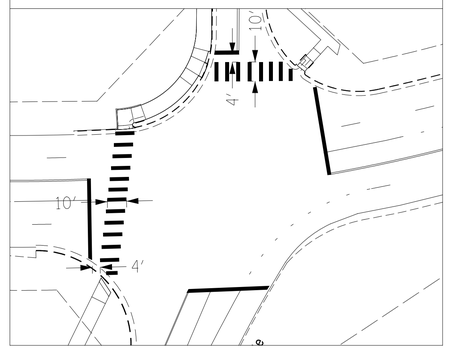
6 Phase
Fully Actuated
w/ Emergency Vehicle Preemption
(Wilmington Signal System)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2024 and "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: https://connect.ncdot.gov/resources/safety/pages/ITS-Design-Resources.aspx
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. Flash beacons 63 and 64 alternately.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
8. Signal system data:
   Controller asset #: 0052.
9. Loop data based on previous plans and/or field observations.
10. This intersection features a GPS preemption system.



STOPBAR AND CROSSWALK LOCATION DIAGRAM



OASIS 2070 TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6
Min Green 1 *	5	12	5	5	5	12
Extension 1 *	4.0	6.0	2.0	2.0	2.0	6.0
Max Green 1 *	50	100	50	50	20	100
Yellow Clearance	3.0	4.3	4.0	3.9	3.0	4.7
Red Clearance	3.1	2.0	2.3	2.0	3.3	1.6
Walk 1 *	-	-	7	-	-	7
Advance Walk	-	-	4	-	-	4
Don't Walk 1	-	-	18	-	-	10
Seconds Per Actuation *	-	1.5	-	-	-	1.5
Max Variable Initial *	-	34	-	-	-	34
Time Before Reduction *	-	15	-	-	-	15
Time To Reduce *	-	30	-	-	-	30
Minimum Gap	-	3.2	-	-	-	3.2
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW
Dual Entry	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

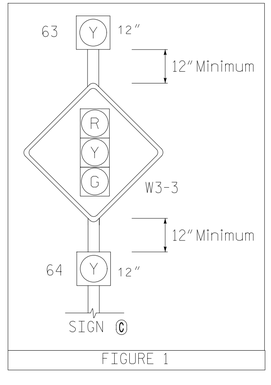


FIGURE 1

LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
	Type I Pushbutton Post	
	Type II Signal Pedestal	
A	Combined Through and Left Arrow Sign (R3-6L)	A
B	Left Arrow "ONLY" Sign (R3-5L)	B
C	See Figure 1	C
D	Street name Sign	D

NC Dept of Transportation
Division of Highways
Final Drawing Date: 1/11/2024
DocuSigned by: Zachary M. Kittle
ITS & Signals Unit

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Signal Upgrade - Sheet 1 of 2

Prepared For:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 New Hanover County Wilmington

PLAN DATE:	January 2024	REVIEWED BY:	
PREPARED BY:	M. L. Stygles	REVIEWED BY:	J. L. Lewis

REVISIONS	INIT.	DATE

SCALE 0 40 1" = 40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATTHEW L. STYGLES

DocuSigned by: Matthew Stygles 1/11/2024
DATE

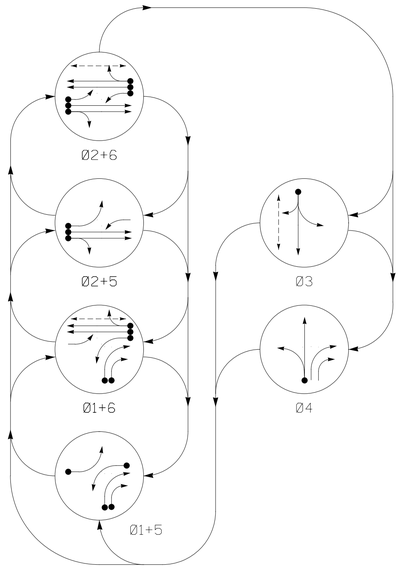
SIG. INVENTORY NO. 03-0052

DocuSign Envelope ID: B007FBFB-AEB4-4E81-ADD9-A920B97DD6B3

PROJECT REFERENCE NO.	SHEET NO.
	Sig.1.1

6 Phase
Fully Actuated
w/ Emergency Vehicle Preemption
(Wilmington Signal System)

DEFAULT PHASING DIAGRAM

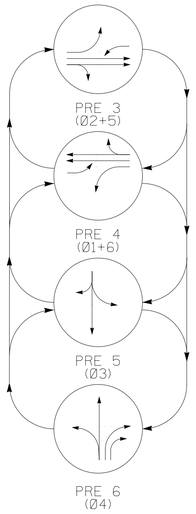


DEFAULT TABLE OF OPERATION

SIGNAL FACE	PHASE										
	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3	Ø4	PRE3	PRE4	PRE5	PRE6	FLASH
11	←	←	~~←~~ F Y	~~←~~ F Y	~~←R~~	~~←R~~	~~F Y~~	←	~~←R~~	~~←R~~	~~←Y~~
12, 13	→	→	R	R	R	→	R	R	R	→	R
21, 22, 23	R	R	G	G	R	R	G	R	R	R	Y
31	R	R	R	R	G ←	R	R	R	G ←	R	R
32	R	R	R	R	G	R	R	R	G	R	R
41	R	R	R	R	R	G ←	R	R	R	G ←	R
42	R	R	R	R	R	G	R	R	R	G	R
51	←	~~←F Y~~	←	~~←F Y~~	~~←R~~	~~←R~~	←	~~F Y~~	~~←R~~	~~←R~~	~~←Y~~
61, 62, 63	R	G	R	G	R	R	R	G	R	R	Y
P31,P32	DW	DW	DW	DW	W	DW	DW	DW	DW	DW	DRK
P61, P62	DW	W	DW	W	DW	DW	DW	DW	DW	DW	DRK

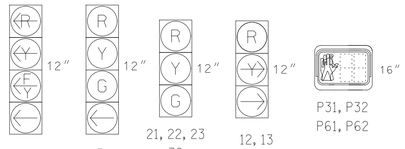
DEFAULT PHASING EV PREEMPT PHASES

(Medium Priority)



SIGNAL FACE I.D.

All Heads L.E.D.



NOTES

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2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. Flash beacons 63 and 64 alternately.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values shall supersede these values.
8. Signal system data:
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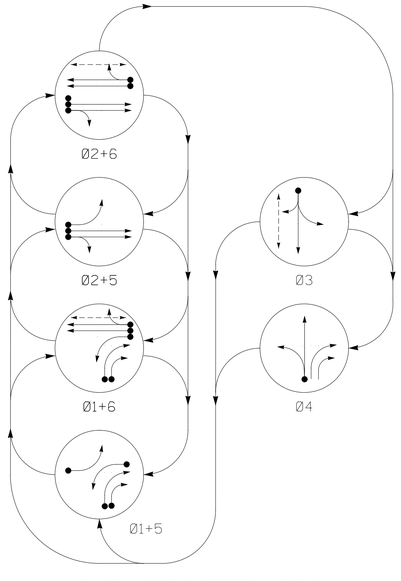
10. This intersection features a GPS preemption system.

ALTERNATE PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

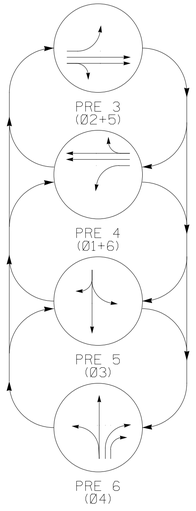
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

ALTERNATE TABLE OF OPERATION

SIGNAL FACE	PHASE										
	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø3	Ø4	PRE3	PRE4	PRE5	PRE6	FLASH
11	←	←	~~←R~~	~~←R~~	~~←R~~	~~←R~~	~~←R~~	←	~~←R~~	~~←R~~	~~←Y~~
12, 13	→	→	R	R	R	→	R	R	R	→	R
21, 22, 23	R	R	G	G	R	R	G	R	R	R	Y
31	R	R	R	R	G ←	R	R	R	G ←	R	R
32	R	R	R	R	G	R	R	R	G	R	R
41	R	R	R	R	R	G ←	R	R	R	G ←	R
42	R	R	R	R	R	G	R	R	R	G	R
51	←	~~←R~~	←	~~←R~~	~~←R~~	~~←R~~	←	~~←R~~	~~←R~~	~~←R~~	~~←Y~~
61, 62, 63	R	G	R	G	R	R	R	G	R	R	Y
P31,P32	DW	DW	DW	DW	W	DW	DW	DW	DW	DW	DRK
P61, P62	DW	W	DW	W	DW	DW	DW	DW	DW	DW	DRK

ALTERNATE PHASING EV PREEMPT PHASES

(Medium Priority)



OASIS 2070 EV PREEMPT

FUNCTION	PRE 3	PRE 4	PRE 5	PRE 6
Interval 1 – Dwell Green	255	255	255	255
Interval 1 – Dwell Yellow	0.0*	0.0*	0.0*	0.0*
Interval 1 – Dwell Red	0.0*	0.0*	0.0*	0.0*
Interval 5 – Exit Green	1	1	1	1
Interval 5 – Yellow	0.0	0.0	0.0	0.0
Interval 5 – Red	0.0	0.0	0.0	0.0
Exit Phase(s)	2+6	2+6	3	4
Priority	MED	MED	MED	MED
Delay Time	0.0	0.0	0.0	0.0
Min Green Before Pre	1	1	1	1
Ped Clear Before Pre	0*	0*	0*	0*
Yellow Clear Before Pre	0.0*	0.0*	0.0*	0.0*
Red Clear Before Pre	0.0*	0.0*	0.0*	0.0*
Dwell Min Time	12	12	5	5
Dwell Max Time (Miniutes)	2	2	2	2
Enable Backup Protection	N	N	N	N
Ped Clear Through Yellow	N	N	N	N
Omit Overlaps	-	B	-	-
Preempt Extend**	2	2	2	2

* Time defaults to time used for phase during normal operation
** Program Timing on GPS Detection Unit

VHB Engineering NC, P.C. (C-3705)
940 Main Campus Drive, Suite 500
Raleigh, NC 27606
919.829.0328

NC Dept of Transportation
Division of Highways

Final Drawing Date: 1/11/2024

DocuSigned by: Zachary M. Little
ITS & Signals Unit

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Signal Upgrade - Sheet 2 of 2

Prepared For:
Transportation Mobility and Safety Division
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 76 (Oleander Drive) at Greenville Avenue/ Greenville Loop Road

Division 3 | New Hanover County | Wilmington

PLAN DATE: January 2024 | REVIEWED BY:
PREPARED BY: M. L. Stygles | REVIEWED BY: J. L. Lewis

REVISIONS	INIT.	DATE

SCALE 0 40 1" = 40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 046057 ENGINEER MATTHEW L STYGLES

DocuSigned by: Matthew L Stygles 1/11/2024
DATE

SIG. INVENTORY NO. 03-0052

PROJECT SPECIAL PROVISONS

GENERAL

CONTRACT TIME AND LIQUIDATED DAMAGES:

SP (City of Wilmington)

The date of availability for this contract is equal to the 'date of beginning' as hereinafter provided in paragraph G-1.47 of the General Conditions.

The completion date for this contract is **60 calendar days** following the 'date of beginning' as hereinafter provided in paragraph G-1.47 of the General Conditions.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

Failure to complete the work within the contract time will result in damages due to public inconvenience, obstruction and delay to traffic, safety, and other considerations. For each consecutive calendar day in excess of the contract time specified, the Contractor shall pay, or have withheld monies due, a sum in accordance with the following:

Days in Excess of Contract Time	Sum per Day
0-14 Days	$ 500
15-22 Days	$ 750
23 Days and Beyond	$ 1,000

Liquidated damages will be adjusted and assessed on a monthly basis at the time of each partial payment request based on the Contractor's progress in comparison with the approved progress schedule.

INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:

(12-18-07) (Rev. 2-21-12) 108 SP1 G13 B

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is the date of availability of the contract.

The completion date for this intermediate contract time is the date which is **Sixty (60)** consecutive calendar days after the date of availability.

The liquidated damages for this intermediate contract time are as described above in Contract Time and Liquidated Damages specification.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the Department will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES:

SP (City of Wilmington)

The Contractor shall complete the required work of installing, maintaining, and removing the traffic control devices for lane closures and restoring traffic to the existing traffic pattern.

The Contractor shall not close or narrow a lane of traffic on **Greenville Loop Road**, detain and/or alter the traffic flow on or during holidays, holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.

2. For **New Year's Day**, between the hours of **6:00 A.M.** December 31st and **7:00 P.M.** January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **7:00 P.M.** the following Tuesday.

3. For **Easter**, between the hours of **6:00 A.M.** Thursday and **7:00 P.M.** Monday.

4. For **Memorial Day**, between the hours of **6:00 A.M.** Friday and **7:00 P.M.** Tuesday.

5. For **Independence Day**, between the hours of **6:00 A.M.** the day before Independence Day and **7:00 P.M.** the day after Independence Day.

   If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **6:00 A.M.** the Thursday before Independence Day and **7:00 P.M.** the Tuesday after Independence Day.

6. For **Labor Day**, between the hours of **6:00 A.M.** Friday and **7:00 P.M.** Tuesday.

7. For **Thanksgiving Day**, between the hours of **6:00 A.M.** Tuesday and **7:00 P.M.** Monday.

8. For **Christmas**, between the hours of **6:00 A.M.** the Friday before the week of Christmas Day and **7:00 P.M.** the following Tuesday after the week of Christmas Day.

9. For **Azalea Festival**, between the hours of **7:00 A.M.** Friday and **6:00 A.M.** Monday.

Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures will not be required during these periods, unless otherwise directed by the Engineer.

The time of availability for this intermediate contract work shall be the time the Contractor begins to install all traffic control devices for lane closures according to the time restrictions listed herein.

The completion time for this intermediate contract work shall be the time the Contractor is required to complete the removal of all traffic control devices for lane closures according to the time restrictions stated above and place traffic in the existing traffic pattern.

The liquidated damages are **Five Hundred Dollars** (**$ 500.00**) per fifteen (15) minutes.

PERMANENT VEGETATION ESTABLISHMENT:

(2-16-12) (Rev. 1-16-24) 104 SP1 G16

Establish a permanent stand of the vegetation mixture shown in the contract. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish permanent vegetation on all erodible areas within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the applicable section of the *Standard Specifications*. All work required for initial vegetation planting shall be performed as a part of the work necessary for the completion and acceptance of the Intermediate Contract Time (ICT). Between the time of ICT and Final Project acceptance, or otherwise referred to as the vegetation establishment period, the Department will be responsible for preparing the required National Pollutant Discharge Elimination System (NPDES) inspection records.

Once the Engineer has determined that the permanent vegetation establishment requirement has been achieved at an 80% vegetation density (the amount of established vegetation per given area to stabilize the soil) and no erodible areas exist within the project limits, the Contractor will be notified to remove the remaining erosion control devices that are no longer needed. The Contractor will be responsible for, and shall correct any areas disturbed by operations performed in permanent vegetation establishment and the removal of temporary erosion control measures, whether occurring prior to or after placing traffic on the project.

Payment for *Response for Erosion Control*, *Seeding and Mulching, Repair Seeding*, *Supplemental Seeding, Mowing, Fertilizer Topdressing, Silt Excavation,* and *Stone for Erosion Control* will be made at contract unit prices for the affected items. Work required that is not represented by contract line items will be paid in accordance with Articles 104-7 or 104-3 of the *Standard Specifications*. No additional compensation will be made for maintenance and removal

of temporary erosion control items.

NO MAJOR CONTRACT ITEMS:

(2-19-02) (Rev. 8-21-07) 104 SP1 G31

None of the items included in this contract will be major items.

NO SPECIALTY ITEMS:

(7-1-95)(Rev. 1-16-24) 108-6 SP1 G34

None of the items included in this contract will be specialty items (see Article 108-6 of the *Standard Specifications*).

FUEL PRICE ADJUSTMENT:

SP (City of Wilmington)

No fuel price adjustment shall apply to this project.

TRENCHES:

SP (City of Wilmington)

All trenches shall be backfilled and made safe at the end of each workday. Payment for installation of utility lines that requires open cut to existing pavement shall include the cost of pavement for repairs (including pavement saw cut and removal) as incidental to the installation of the utility. No separate payment will be made for this work unless otherwise specifically mentioned in this contract.

SUBSURFACE INVESTIGATION:

SP (City of Wilmington)

The Contractor shall make his/her own subsurface investigations. Any information obtained by the City as a result of its own subsurface investigations will be made available within the plans. This information is provided for informational purposes only and shall not relieve the Contractor of responsibility for making his own investigations.

There will be no direct payment for the work covered by this provision. Payment at the contract unit prices for the various items in the contract will be full compensation for all work covered by this provision.

PERSONNEL PARKING:

SP (City of Wilmington)

All personnel involved with construction operations shall not park their personal vehicles within the right of way of the project limits for the duration of the construction project. The Contractor shall furnish a parking area that is located off the project limits. The Contractor shall be responsible for daily transportation of all employees to and from the provided parking area and the project site.

MAINTENANCE OF MAILBOXES, SIGNS, MISCELLANEOUS APPURTENANCES:

SP (City of Wilmington)

The Contractor shall be required to maintain mailboxes, signs and all miscellaneous appurtenances impacted by construction activities in working order for the duration of

construction as directed by the engineer. Work on the same items shall be done in a timely manner. No separate payment for work on these items will be made as the work will be considered incidental to other items in the contract unless otherwise mentioned in the contract document.

TWELVE MONTH GUARANTEE – LGA Projects

(10-7-13) 108 SP1 G146

(A) The Contractor shall guarantee materials and workmanship against latent and patent defects arising from faulty materials, faulty workmanship or negligence for a period of twelve months following the date of final acceptance of the work for maintenance and shall replace such defective materials and workmanship without cost to **City of Wilmington**. The Contractor will not be responsible for damage due to faulty design, normal wear and tear, for negligence on the part of **City of Wilmington**, and/or for use in excess of the design.

(B) Where items of equipment or material carry a manufacturer's guarantee for any period in excess of twelve months, then the manufacturer's guarantee shall apply for that particular piece of equipment or material. **City of Wilmngton**'s first remedy shall be through the manufacturer although the Contractor is responsible for invoking the warranted repair work with the manufacturer. The Contractor's responsibility shall be limited to the term of the manufacturer's guarantee. **City of Wilmington** would be afforded the same warranty as provided by the Manufacturer.

This guarantee provision shall be invoked only for major components of work in which the Contractor would be wholly responsible for under the terms of the contract. Examples would include pavement structures, bridge components, and sign structures. This provision will not be used as a mechanism to force the Contractor to return to the project to make repairs or perform additional work that **City of Wilmington** would normally compensate the Contractor for. In addition, routine maintenance activities (i.e. mowing grass, debris removal, ruts in earth shoulders,) are not parts of this guarantee.

Appropriate provisions of the payment and/or performance bonds shall cover this guarantee for the project.

EROSION AND SEDIMENT CONTROL/STORMWATER CERTIFICATION:

(1-16-07) (Rev 12-15-20) 105-16, 225-2, 16 SP1 G180

General

Schedule and conduct construction activities in a manner that will minimize soil erosion and the resulting sedimentation and turbidity of surface waters. Comply with the requirements herein regardless of whether or not a National Pollution discharge Elimination System (NPDES) permit for the work is required.

Establish a chain of responsibility for operations and subcontractors' operations to ensure that the *Erosion and Sediment Control/Stormwater Pollution Prevention Plan* is implemented and maintained over the life of the contract.

(A) *Certified Supervisor* - Provide a certified Erosion and Sediment Control/Stormwater Supervisor to manage the Contractor and subcontractor operations, ensure compliance with Federal, State and Local ordinances and regulations, and manage the Quality Control Program.

(B) *Certified Foreman* - Provide a certified, trained foreman for each construction operation that increases the potential for soil erosion or the possible sedimentation and turbidity of surface waters.

(C) *Certified Installer* - Provide a certified installer to install or direct the installation for erosion or sediment/stormwater control practices.

(D) *Certified Designer* - Provide a certified designer for the design of the erosion and sediment control/stormwater component of reclamation plans and, if applicable, for the design of the project erosion and sediment control/stormwater plan.

Roles and Responsibilities

(A) *Certified Erosion and Sediment Control/Stormwater Supervisor* - The Certified Supervisor shall be Level II and responsible for ensuring the erosion and sediment control/stormwater plan is adequately implemented and maintained on the project and for conducting the quality control program. The Certified Supervisor shall be on the project within 24 hours notice from initial exposure of an erodible surface to the project's final acceptance. Perform the following duties:

(1) Manage Operations - Coordinate and schedule the work of subcontractors so that erosion and sediment control/stormwater measures are fully executed for each operation and in a timely manner over the duration of the contract.

(a) Oversee the work of subcontractors so that appropriate erosion and sediment control/stormwater preventive measures are conformed to at each stage of the work.
(b) Prepare the required National Pollutant Discharge Elimination System (NPDES) Inspection Record and submit to the Engineer.
(c) Attend all weekly or monthly construction meetings to discuss the findings of the NPDES inspection and other related issues.
(d) Implement the erosion and sediment control/stormwater site plans requested.
(e) Provide any needed erosion and sediment control/stormwater practices for the Contractor's temporary work not shown on the plans, such as, but not limited to work platforms, temporary construction, pumping operations, plant and storage yards, and cofferdams.
(f) Acquire applicable permits and comply with requirements for borrow pits, dewatering, and any temporary work conducted by the Contractor in jurisdictional areas.

(g) Conduct all erosion and sediment control/stormwater work in a timely and workmanlike manner.

(h) Fully perform and install erosion and sediment control/stormwater work prior to any suspension of the work.

(i) Coordinate with Department, Federal, State and Local Regulatory agencies on resolution of erosion and sediment control/stormwater issues due to the Contractor's operations.

(j) Ensure that proper cleanup occurs from vehicle tracking on paved surfaces or any location where sediment leaves the Right-of-Way.

(k) Have available a set of erosion and sediment control/stormwater plans that are initialed and include the installation date of Best Management Practices. These practices shall include temporary and permanent groundcover and be properly updated to reflect necessary plan and field changes for use and review by Department personnel as well as regulatory agencies.

(2) Requirements set forth under the NPDES Permit - The Department's NPDES Stormwater permit (NCS000250) outlines certain objectives and management measures pertaining to construction activities. The permit references *NCG010000, General Permit to Discharge Stormwater* under the NPDES, and states that the Department shall incorporate the applicable requirements into its delegated Erosion and Sediment Control Program for construction activities disturbing one or more acres of land. The Department further incorporates these requirements on all contracted bridge and culvert work at jurisdictional waters, regardless of size. Some of the requirements are, but are not limited to:

(a) Control project site waste to prevent contamination of surface or ground waters of the state, i.e. from equipment operation/maintenance, construction materials, concrete washout, chemicals, litter, fuels, lubricants, coolants, hydraulic fluids, any other petroleum products, and sanitary waste.

(b) Inspect erosion and sediment control/stormwater devices and stormwater discharge outfalls at least once every 7 calendar days and within 24 hours after a rainfall event equal to or greater than 1.0 inch that occurs within a 24 hour period. Additional monitoring may be required at the discretion of Division of Water Resources personnel if the receiving stream is 303(d) listed for turbidity and the project has had documented problems managing turbidity.

(c) Maintain an onsite rain gauge or use the Department's Multi-Sensor Precipitation Estimate website to maintain a daily record of rainfall amounts and dates.

(d) Maintain erosion and sediment control/stormwater inspection records for review by Department and Regulatory personnel upon request.

(e) Implement approved reclamation plans on all borrow pits, waste sites and staging areas.

(f) Maintain a log of turbidity test results as outlined in the Department's Procedure for Monitoring Borrow Pit Discharge.
(g) Provide secondary containment for bulk storage of liquid materials.
(h) Provide training for employees concerning general erosion and sediment control/stormwater awareness, the Department's NPDES Stormwater Permit NCS000250 requirements, and the applicable requirements of the *General Permit, NCG010000*.
(i) Report violations of the NPDES permit to the Engineer immediately who will notify the Division of Water Quality Regional Office within 24 hours of becoming aware of the violation.

(3) Quality Control Program - Maintain a quality control program to control erosion, prevent sedimentation and follow provisions/conditions of permits. The quality control program shall:

(a) Follow permit requirements related to the Contractor and subcontractors' construction activities.
(b) Ensure that all operators and subcontractors on site have the proper erosion and sediment control/stormwater certification.
(c) Notify the Engineer when the required certified erosion and sediment control/stormwater personnel are not available on the job site when needed.
(d) Conduct the inspections required by the NPDES permit.
(e) Take corrective actions in the proper timeframe as required by the NPDES permit for problem areas identified during the NPDES inspections.
(f) Incorporate erosion control into the work in a timely manner and stabilize disturbed areas with mulch/seed or vegetative cover on a section-by-section basis.
(g) Use flocculants approved by state regulatory authorities where appropriate and where required for turbidity and sedimentation reduction.
(h) Ensure proper installation and maintenance of temporary erosion and sediment control devices.
(i) Remove temporary erosion or sediment control devices when they are no longer necessary as agreed upon by the Engineer.
(j) The Contractor's quality control and inspection procedures shall be subject to review by the Engineer. Maintain NPDES inspection records and make records available at all times for verification by the Engineer.

(B) *Certified Foreman* - At least one Certified Foreman shall be onsite for each type of work listed herein during the respective construction activities to control erosion, prevent sedimentation and follow permit provisions:

(1) Foreman in charge of grading activities
(2) Foreman in charge of bridge or culvert construction over jurisdictional areas
(3) Foreman in charge of utility activities

The Contractor may request to use the same person as the Level II Supervisor and Level II Foreman. This person shall be onsite whenever construction activities as described above are taking place. This request shall be approved by the Engineer prior to work beginning.

The Contractor may request to name a single Level II Foreman to oversee multiple construction activities on small bridge or culvert replacement projects. This request shall be approved by the Engineer prior to work beginning.

(C) *Certified Installers* - Provide at least one onsite, Level I Certified Installer for each of the following erosion and sediment control/stormwater crew:

(1) Seeding and Mulching
(2) Temporary Seeding
(3) Temporary Mulching
(4) Sodding
(5) Silt fence or other perimeter erosion/sediment control device installations
(6) Erosion control blanket installation
(7) Hydraulic tackifier installation
(8) Turbidity curtain installation
(9) Rock ditch check/sediment dam installation
(10) Ditch liner/matting installation
(11) Inlet protection
(12) Riprap placement
(13) Stormwater BMP installations (such as but not limited to level spreaders, retention/detention devices)
(14) Pipe installations within jurisdictional areas

If a Level I *Certified Installer* is not onsite, the Contractor may substitute a Level II Foreman for a Level I Installer, provided the Level II Foreman is not tasked to another crew requiring Level II Foreman oversight.

(D) *Certified Designer* - Include the certification number of the Level III Certified Designer on the erosion and sediment control/stormwater component of all reclamation plans and if applicable, the certification number of the Level III Certified Designer on the design of the project erosion and sediment control/stormwater plan.

Preconstruction Meeting

Furnish the names of the *Certified Erosion and Sediment Control/Stormwater Supervisor, Certified Foremen, Certified Installers* and *Certified Designer* and notify the Engineer of changes in certified personnel over the life of the contract within 2 days of change.

Ethical Responsibility

Any company performing work for the North Carolina Department of Transportation has the ethical responsibility to fully disclose any reprimand or dismissal of an employee resulting from improper testing or falsification of records.

Revocation or Suspension of Certification

Upon recommendation of the Chief Engineer to the certification entity, certification for *Supervisor*, *Certified Foremen*, *Certified Installers* and *Certified Designer* may be revoked or suspended with the issuance of an *Immediate Corrective Action (ICA), Notice of Violation (NOV),* or C*ease and Desist Order* for erosion and sediment control/stormwater related issues.

The Chief Engineer may recommend suspension or permanent revocation of certification due to the following:

(A) Failure to adequately perform the duties as defined within this certification provision.
(B) Issuance of an ICA, NOV, or Cease and Desist Order.
(C) Failure to fully perform environmental commitments as detailed within the permit conditions and specifications.
(D) Demonstration of erroneous documentation or reporting techniques.
(E) Cheating or copying another candidate's work on an examination.
(F) Intentional falsification of records.
(G) Directing a subordinate under direct or indirect supervision to perform any of the above actions.
(H) Dismissal from a company for any of the above reasons.
(I) Suspension or revocation of one's certification by another entity.

Suspension or revocation of a certification will be sent by certified mail to the certificant and the Corporate Head of the company that employs the certificant.

A certificant has the right to appeal any adverse action which results in suspension or permanent revocation of certification by responding, in writing, to the Chief Engineer within 10 calendar days after receiving notice of the proposed adverse action.

Chief Engineer
1536 Mail Service Center
Raleigh, NC 27699-1536

Failure to appeal within 10 calendar days will result in the proposed adverse action becoming effective on the date specified on the certified notice. Failure to appeal within the time specified will result in a waiver of all future appeal rights regarding the adverse action taken. The certificant will not be allowed to perform duties associated with the certification during the appeal process.

The Chief Engineer will hear the appeal and make a decision within 7 days of hearing the appeal. Decision of the Chief Engineer will be final and will be made in writing to the certificant.

If a certification is temporarily suspended, the certificant shall pass any applicable written examination and any proficiency examination, at the conclusion of the specified suspension period, prior to having the certification reinstated.

Measurement and Payment

Certified Erosion and Sediment Control/Stormwater Supervisor, Certified Foremen, Certified Installers and *Certified Designer* will be incidental to the project for which no direct compensation will be made.

DELIVERY AND ACCEPTANCE OF MATERIALS:

SP (City of Wilmington)

The project inspector shall be on site to verify and accept materials delivered to the project. The Contractor will be required to coordinate with the inspector and schedule delivery times of materials so the inspector may witness and accept delivery of project items. If the project inspector is not on site at time of delivery of materials, the City reserves the right to refuse payment of all associated materials delivered to the project.

Acceptance of materials to the project site does not guarantee acceptance or approval of use of materials on and/or within the project. Acceptance of use of materials shall follow guidelines as noted within the "Shop Drawings" Technical Specification in Section 15 within these contract documents.

DRUG FREE WORKPLACE:

SP (City of Wilmington)

The Contractor is to provide and maintain a drug free workplace, including certification, in accordance with the Federal Drug Free Workplace Act of 1988 (40 CFR Part 32).

REQUEST FOR INFORMATION (RFI) PROCEDURES:

SP (City of Wilmington)

All requests for information need to be sent to the City or duly authorized agent in writing.

PROJECT COMPLETION:

SP (City of Wilmington)

When the project is nearing completion, the City will obtain comments from the impacted property owners concerning items that are outstanding, yet to be completed. The Engineer will determine which items have sufficient justification to be included in the final punch-list, and the Contractor will be required to complete these items with no additional payment and in a timely fashion.

COORDINATION WITH UTILITY COMPANIES:

SP (City of Wilmington)

Utilities as shown on the plans are intended to represent general locations only. It shall be the responsibility of the Contractor, prior to construction, to contact appropriate utility owners and precisely locate utilities that could be affected by the proposed construction. The Contractor shall dig sample holes to uncover the utility. The digging of sample holes shall be coordinated with the Engineer who will determine the number of such holes and the Contractor shall coordinate and schedule the utility owner(s) to locate the utility vertical and/or horizontal to avoid conflicts. There is no line item to pay for digging work. Work is considered incidental to other pay items.

The Contractor shall be responsible for repair of any damage to the utility as well as any other damage may be caused due to the disturbance of the Utility. The Contractor will not be permitted to submit any claims for delays caused by utility relocation and proposed utility construction.

The Contractor shall be responsible for coordinating concurrent construction directly with utility owner representatives. Coordination efforts and concurrent construction conflicts will be addressed and discussed during the pre-construction meeting. The City at the time of pre-construction conference will provide names, addresses and telephone numbers of public and private utility owner representatives.

All underground utilities may have not been identified. The Contractor shall call NC One Call to identify underground utilities before starting any digging and/or excavation operation.

Where changes to utility facilities are to be made solely for the convenience of the Contractor, it shall be the Contractor's responsibility to arrange for such changes and the Contractor shall bear all costs of such changes.

Existing fire hydrants shall be accessible to fire department personnel at all times, unless otherwise noted in writing by the local utility owner.

Prior to submitting his bid, the Contractor shall make his own determination as to the nature and extent of the utility facilities, including proposed adjustments, new facilities, or temporary work to be performed by the utility owner or his representative; and as to whether or not any utility work is planned by the owner in conjunction with the project construction. The Contractor shall consider in his bid all of the permanent and temporary utility facilities in their present or relocated positions, whether or not specifically shown on the plans or covered in the project special provisions. It will be the Contractor's responsibility to anticipate any additional costs to him resulting from such utility work and to reflect these costs in his bid for the various items in the contract.

The Contractor shall be responsible for field verifying heights and locations of power lines and will be required to maintain the distance from the power lines in accordance with local, State and Federal Safety regulations.

USE OF UNMANNED AIRCRAFT SYSTEM (UAS):
(8-20-19) SP01 G092

The Contractor shall adhere to all Federal, State and Local regulations and guidelines for the use of Unmanned Aircraft Systems (UAS). This includes but is not limited to US 14 CFR Part 107 *Small UAS Rule*, NC GS 15A-300.2 *Regulation of launch and recovery sites,* NC GS 63-95 *Training required for the operation of unmanned aircraft systems*, NC GS 63-96 *Permit required for commercial operation of unmanned aircraft system,* and NCDOT UAS Policy. The required operator certifications include possessing a current Federal Aviation Administration (FAA) Remote Pilot Certificate, a NC UAS Operator Permit as well as operating a UAS registered with the FAA.

Prior to beginning operations, the Contractor shall complete the NCDOT UAS – Flight Operation Approval Form and submit it to the Engineer for approval. All UAS operations shall be approved by the Engineer prior to beginning the operations.

All contractors or subcontractors operating UAS shall have UAS specific general liability insurance to cover all operations under this contract.

The use of UAS is at the Contractor's discretion. No measurement or payment will be made for the use of UAS. In the event that the Department directs the Contractor to utilize UAS, payment will be in accordance with Article 104-7 Extra Work.

ERRATA
(1-16-24) Z-4

Revise the *2024 Standard Specifications* as follows:

Division 3

Page 3-5, Article 305-2 MATERIALS, after line 16, replace " 1032-3(A)(7)" with "1032-3" and add the item "Galvanized Corrugated Steel Pipe" with Section "1032-3".

Page 3-6, Article 310-2 MATERIALS, after line 9, add the item "Galvanized Corrugated Steel Pipe" with Section "1032-3".

Division 9

Page 9-17, Article 904-4 MEASUREMENT AND PAYMENT, prior to line 1, replace " Sign Erection, Relocate Type (Ground Mounted)" with "Sign Erection, Relocate Type ___ (Ground Mounted)".

Division 10

Page 10-51, Article 1024-4 WATER, prior to line 1, delete the "unpopulated blank row" in Table 1024-2 between "Time of set, deviation from control" and "Chloride Ion Content, Max.".

Page 10-170, Subarticle 1081-1(C) Requirements, line 4, replace "maximum" with "minimum".

Division 11

Page 11-15, Article 1160-4 MEASUREMENT AND PAYMENT, line 24, replace "Where barrier units are moved more than one" with "Where barrier units are moved more than once".

Division 15

Page 15-10, Article 1515-4 MEASUREMENT AND PAYMENT, lines 11, replace " All piping" with "All labor, the manhole, other materials, excavation, backfilling, piping".

Division 16

Page 16-14, Article 1633-5 MEASUREMENT AND PAYMENT, line 20-24 and prior to line 25, delete and replace with the following " *Flocculant* will be measured and paid in accordance with Article 1642-5 applied to the temporary rock silt checks."

Page 16-3, Article 1609-2 MATERIALS, after line 26, replace "Type 4" with "Type 4a".

Page 16-25, Article 1644-2 MATERIALS, after line 22, replace "Type 4" with "Type 4a".

PROJECT SPECIAL PROVISONS

ROADWAY

CLEARING AND GRUBBING - METHOD II:

(9-17-02) (Rev. 3-19-24) 200 SP2 R02A

Perform clearing on this project to the limits established by Method - II shown on Standard Drawing No. 200.02 of the *Roadway Standard Drawings*. Conventional clearing methods may be used except where permit drawings or conditions have been included in the proposal which require certain areas to be cleared by hand methods.

BURNING RESTRICTIONS:

(7-1-95) 200, 210, 215 SP2 R05

Open burning is not permitted on any portion of the right-of-way limits established for this project. Do not burn the clearing, grubbing or demolition debris designated for disposal and generated from the project at locations within the project limits, off the project limits or at any waste or borrow sites in this county. Dispose of the clearing, grubbing and demolition debris by means other than burning, according to state or local rules and regulations.

SHOULDER AND FILL SLOPE MATERIAL:

(5-21-02)(Rev. 1-16-24) 235, 560 SP2 R45 A

Description

Perform the required shoulder and slope construction for this project in accordance with the applicable requirements of Section 560 and Section 235 of the *Standard Specifications*.

Measurement and Payment

Where the material has been obtained from an authorized stockpile or from a borrow source and *Borrow Excavation* is not included in the contract, no direct payment will be made for this work, as the cost of this work will be part of the work being paid at the contract lump sum price for *Grading.* If *Borrow Excavation* is included in this contract and the material has been obtained from an authorized stockpile or from a borrow source, measurement and payment will be as provided in Section 230 of the *Standard Specifications* for *Borrow Excavation*.

CONSTRUCTION SURVEYING:

SP (City of Wilmington)

Description

When required by the Contract, provide all construction layout, surveying, stakeout, supplemental surveying, field and office calculations, supplemental surveying and engineering necessary for the proper control of construction operations in accordance with this section and the NCDOT "Manual on Construction Layout", or unless otherwise specified herein. The NCDOT Manual for Uniform Construction may be obtained from the NCDOT Construction Unit or at the following web links:

https://connect.ncdot.gov/projects/construction/Construction%20%20Stakeout%20Manual/Construction%20Stakeout%20Manual.pdf and

https://connect.ncdot.gov/projects/construction/Pages/ConstMan.aspx?Method=CM-19-000

General

i. The Contractor shall be responsible for the preservation of centerline or baseline control and benchmarks. The Contractor shall establish and identify clearing limits. The Contractor shall provide all additional stakes including but not limited to centerline, Y-Line, connections, ramps, loops, slope stakes, right of way markers, fine grade stakes, construction benchmarks, and other reference marks or points that may be necessary to provide alignments and grades for construction of all roadway, structure, and miscellaneous items.

ii. Perform any staking or re-staking as deemed necessary by the Engineer to ensure all project improvements and miscellaneous items are constructed in accordance with the established lines and grades. It shall be the responsibility of the Contractor to advise the Engineer of horizontal or vertical alignment revisions or plan revisions necessarily needed to establish smooth transitions to existing facilities. Payment for such additional surveying or re-staking, field and office calculations shall be at no cost to the City of Wilmington.

iii. The benchmarks furnished by the Contractor's Surveyor and established by the Contractor's Surveyor shall be preserved and protected. Any benchmarks conflicting with the construction of the project will be relocated by the Contractor's Surveyor, at no additional expense to the Owner. Any temporary benchmarks which are needed for construction shall be established by the Contractor at no additional expense to the Owner.

iv. Set stakes to establish lines and grades for subgrade, base, curb, and related items at intervals along the line of work not greater than 50 feet. When the Engineer determines that horizontal or vertical alignments require the spacing of the stakes to be closer than 50 feet, the stakes shall be set accordingly at no additional expense to the Owner.

v. Fine grade or other intermediate grade stakes required for the construction of the project shall be set as the work progresses. Fine grade hubs (blue tops) shall be set on both sides of each roadbed with distances and grades referenced to either the finished centerline or edge of pavement grade, as appropriate in accordance with the NCDOT Manual of Uniform Construction Layout.

vi. Grade stakes shall be set at intervals specified herein but at offsets determined by the Contractor to facilitate checking of all subgrade, base, curb, and pavement elevations including those in ramps, streets, driveways, crossovers, intersections, and irregular shaped areas. The Contractor shall set slope stakes at all stations and half stations in

accordance with the procedures established in the NCDOT "Manual on Construction Layout".

Construction Methods

i. Furnish personnel who are under the direct supervision of an engineer or land surveyor licensed by the State of North Carolina NCGS §89C and in good standing with the North Carolina Board of Engineers and Land Surveyors.

ii. Furnish personnel who are experienced in highway and bridge construction surveying and are capable of accurately establishing all line and grade points necessary to complete the work in accordance with the plan dimensions with the precision established in the NCDOT Manual for Construction Layout. Consult the Engineer for clarification of the plans.

iii. The Contractor shall not engage the services of any person or persons with the City of Wilmington or NCDOT nor make use of City of Wilmington or NCDOT for the performance of any work covered by this item. All surveying equipment, stakes, and any material and equipment necessary to perform the work shall be furnished by the Contractor as part of the established line item unit bid price for “Construction Surveying” as indicated in the Itemized Proposal.

iv. Perform all contract surveying work in a safe manner and confirm to Subarticle 107-21 “Safety and Accident Protection” of the latest version of the NCDOT Standard Specifications, at no additional expense to the Owner.

v. Perform any flagging operations or other traffic control in accordance with the most recent copy of the MUTCD and Section 1150 of the latest version of the NCDOT Standard Specifications at no additional cost to the Owner.

vi. Perform surveying along all portions of ramps, bridges, roadways, sidewalks, and all other roadways in accordance with the traffic control requirements provided in the NCDOT Encroachment Agreement in Section 22000-Appendix at no additional cost to the Owner.

vii. The Contractor may elect to use global positioning system (GPS) surveying, either static or kinematic. Perform GPS surveys with same or higher order of accuracy as conventional surveys detailed in the NCDOT *Manual for Construction Layout*.

viii. This project’s localized coordinate system developed by Engineer of Record is referenced from the State Plane Coordinate System as shown on the projects’ Survey Control Plan Sheet. Obtain the survey control information the Engineer of Record used in establishing the localized coordinate system from the Engineer, specifically the rotation, scaling, translation and coordinates for the azimuth pairs. Newly developed GPS procedures and techniques that do not conform with this section may be used, if approved by the Engineer.

ix. Investigate the plan horizontal alignment, vertical profile and super elevation of existing facilities that tie to proposed roadways. Investigate 100 ft beyond all paving limits and revise grades as needed to establish smooth transitions to the existing facilities at no additional expense to the Owner.

x. Tie existing driveways and sidewalks to proposed facilities within the limits detailed in the plans and within the gradients detailed in the NCDOT *Roadway Standard Drawings or as shown on the plans*. Contact the Engineer to obtain approval from the Owner all final driveway gradients prior to construction at no additional expense to the Owner.

xi. The Engineer reserves the right to check, correct where necessary or require any layout work to be revised. The Contractor will perform checks to ensure the roadway, bridge, structures and incidental items are surveyed in accordance with the plans and the NCDOT *Manual for Construction Layout*. at no additional expense to the Owner.

xii. The Owner's review of the Contractor's work in no way relieves the Contractor of responsibility for conformance with the contract. Failure by the Engineer or inspector to point out unsatisfactory work, from lack of discovery or for any other reason, in no way prevents later rejection or corrections to the unsatisfactory work, when discovered. No claims for compensation or time will be allowed for losses suffered due to any necessary removals or repairs resulting from the unsatisfactory work.

xiii. When requested by the Engineer or as noted in the plans, check the accuracy of the stakeout including an independent bridge stakeout/layout. Notify the Engineer of any inaccuracies and take action to correct all inaccuracies in the construction stakeout before performing the affected work at no additional expense to the Owner.

xiv. When the Contractor proposes an alteration to the plans to rectify a construction stakeout error, submit alterations to the Engineer for review and approval. Include design calculations and drawings sealed by an engineer licensed by the State of North Carolina along with a narrative describing justification for the alteration at no additional expense to the Owner.

Surveying Records

i. Submit proposed method for setting up survey books or electronic data files to the Engineer before beginning work to assure clarity and adequacy.

ii. Promptly make available to the Engineer all requested survey records.

iii. Provide updates to the Engineer monthly of the electronic and/or manuscript survey records. Submit remaining records upon completion of the work. Attest the work was performed in accordance with the contract by providing all receivable information signed by an engineer or land surveyor licensed by the State of North Carolina and in responsible charge.

Horizontal and Vertical Control

i. The Contractor is responsible to furnish horizontal and set horizontal baseline control on approximate 1,000 ft intervals and vertical control on approximate 2,500 ft intervals within the project limits. The Contractor may adjust these parameters dependent on the nature and size of the project.

ii. Obtain a copy of the electronic survey control files from the Engineer. Clearing limits may be established during original traverse of baseline control provided the accuracy ratio does not exceed 1 ft per 5,000 ft of perimeter and all Contractor established baseline control is protected and preserved during clearing operations.

iii. Before performing any additional construction layout, verify the horizontal baseline control by a closed traverse survey or alternate approved method. The accuracy ratio shall not exceed an error of closure of 1 ft per 20,000 ft of perimeter.

iv. Verify the vertical control by performing a closed loop survey using differential leveling. For the error of closure, do not exceed 0.05 ft times the square root of the miles:

$$Error\ of\ Closure \leq 0.05\text{ft}\sqrt{(x)miles}$$

v. Notify the Engineer of any discrepancies in either the horizontal or vertical control. Reference, outside of the proposed construction limits and evenly distributed throughout the project limits, a minimum of 50% of the projects' horizontal and vertical control. Provide reference information to the Engineer.

vi. If GPS is used, occupy the azimuth pairs with the base station during verification of baseline control, otherwise, occupy baseline. Verify remaining baseline control using a Rover. Submit coordinate data showing differences between supplied baseline coordinates and field obtained GPS coordinates. Include report detailing the use of preliminary input data, specifically rotation, scaling and translation.

vii. Using the horizontal and vertical control established by the Contractor Surveyor, provide surveying necessary to construct all roadway, structure and miscellaneous items as detailed in the plans. Perform staking in accordance with the NCDOT *Manual for Construction Layout*. Layout the work and provide all measurements that may be required for the execution of the construction in conformity with the contract.

Right of Way, Control of Access and Easements

i. The Contractor Surveyor will establish the location of all proposed right-of-way markers, construction easements, sidewalk easements, slope easements, control of-access markers and temporary drainage and permanent drainage easements as shown in the plans at no additional expense to the Owner.

ii. Reference the location of all proposed markers and permanent drainage easements. Restore right-of-way and control-of-access monument positions after completion of construction. Set a right-of-way or control-of-access monument cap on an 18" long 12 #5

reinforcing bar and a “carsonite” NCDOT type witness stake at no additional expense to the Owner; unless concrete right-of-way and control of-access markers are specified in the contract. The Contractor will provide any monument caps. The Contractor shall provide witness stakes. Re-establish location of permanent drainage easements or right-of-way after completion of construction and install an 18" long #5 reinforcing bar for monumentation with a final as-built survey of these points at no additional expense to the Owner.

iii. Validate the position of the markers and permanent drainage easement locations with those detailed in the plans. Report any discrepancies to the Engineer.

Drainage, Traffic Signals and Utility Construction systems

General

i. Where underground conflicts are suspected whether shown in the plans or not, contact utility owners and locate all utilities horizontally and vertically at no additional expense to the Owner.

ii. Consider the utilities’ locations and elevations in the layout of the drainage systems and utility construction systems. Utilities may exist that are not depicted in the plans.

iii. Submit (2) two copies of all layout drawings for traffic signals, drainage systems, underdrain systems, subdrain systems, traffic signal and utility construction systems to the Engineer for his review and approval. The Engineer will note the review and approval by adding an appropriate note to the drawings along with the date and his signature. The Engineer will retain a copy of the drawings and a copy will be returned to the Contractor.

Drainage Systems

i. Provide construction layout of drainage systems, as depicted in the plans and in accordance with the NCDOT *Guidelines for Drainage Studies and Hydraulic Design* located at:

https://connect.ncdot.gov/resources/hydro/DrainageStudiesGuidelines/2022%20Guidelines%20for%20Drainage%20Studies%20and%20Hydraulic%20Design.pdf

ii. Consider the locations and elevations of all existing and proposed utilities, proposed utility construction and existing and proposed drainage systems, in the layout of the drainage system.

iii. Modifications of the drainage plan may be necessary to properly collect and transport water. Advise the Engineer if modifications are needed to achieve the original design functionality and the intent of the drainage plans, such as adjusting the location of a drainage structure, adding a drainage structure and increasing or decreasing pipe lengths. The Engineer will review any major modifications.

iv. Provide layout drawing of the drainage system including calculations of flow line elevations for all drainage structures; pipe invert elevations, both inlet and outlet of the drainage structure; grade of each pipe within the drainage system; elevation of any existing facility connection, such as stream or pipe; if necessary; headwall location, if depicted in the plans; and locations and elevations of any existing or proposed utilities to the Engineer for review and approval at least 7 days before beginning work on the drainage system.

v. Modification of the submitted drainage layout drawing by the Engineer will not eliminate the Contractor's liability for the accuracy of the information submitted. Any re-staking or additional staking required to conform with the approved drainage layout drawing is incidental to the work of "Construction Surveying" and no direct compensation will be made.

Traffic Signal and Utility Construction

i. Provide traffic signal and utility construction layout as detailed in the contract. Consider the locations and elevations of all existing and proposed utilities and traffic signal improvements, proposed utility construction and existing and proposed drainage systems in the layout of the utility and traffic signal construction.

ii. Advise the Engineer if modifications to the utility construction or traffic signal plans are necessary. The Engineer will review any major modifications.

iii. Provide layout drawing of the traffic signal improvements, utility construction system including elevations of any existing utilities, drainage systems and/or proposed drainage systems to the Engineer for review and approval at least 7 days before beginning work on the utility construction system. Layout drawings are incidental to the work of "Construction Surveying" and no direct compensation will be made.

iv. Modification of the submitted traffic signal or utility construction layout drawing by the Engineer will not eliminate the Contractor's liability for the accuracy of the information submitted. Any restaking or additional staking required to conform with the approved utility layout drawing is incidental to the work. Modifications to construction layout and drawings, additional staking or restaking is considered incidental to the work of "Construction Surveying" and no direct compensation will be made.

Structures

i. Provide surveying and calculations necessary to construct structures in accordance with the plans. Provide staking in accordance with the NCDOT *Manual for Construction Layout*.

ii. Establish horizontal alignment of entire structure, culvert or structure improvements as shown on the plans. Set at least one benchmark adjacent to the structure site that will be retained throughout the structure construction. Contractor shall preserve this benchmark

and provide witness staking and protection to a degree necessary as he determines necessary for the satisfactory completion of the project.

iii. The Contractor shall provide his methods of stakeout of the bridge structure including his step-by-step method for checking for surveying and construction layout consistency to the Engineer or his representative prior to stakeout. No additional compensation will be made for this work as it will be considered incidental to the unit bid price indicated in the Itemized Proposal for "Construction Surveying".

iv. Structure construction stakes and other reference control marks or points shall be set at sufficiently and at frequent project schedule intervals to assure that all components of the structure are constructed in accordance with the lines and grades shown in the plans. The Contractor will be responsible for all structure alignment control, grade control, and all necessary calculations to establish and set these controls. The Contractor will furnish the finished construction elevations for his use in determining the required construction elevations for bridges.

v. The Contractor Surveyor is required to calculate and furnish the finished construction elevations for use in determining the required construction elevations for bridges. Provide method for computing buildups over beams, screed grades and overhang form elevations to the Engineer for review before staking these items to assure clarity and adequacy. No additional compensation will be made for this work as it will be considered incidental to the unit bid price indicated in the Itemized Proposal for "Construction Surveying".

vi. The Contractor Surveyor shall perform an independent investigation to check structure stakeout/layout against office structure plans and have an independent field check made by a separate survey crew at no additional cost to the Owner. Such work will be considered incidental to the unit bid price indicated in the Itemized Proposal for "Construction Surveying".

vii. Submit 2 copies of structure layout drawings to the Engineer for his review and approval. The Contractor shall demonstrate to the Engineer or his representative that the Contractor Surveyor has independently verified the structure layout, validates the stakeout and layout is correct and within construction tolerances and provides a certified PE sealed letter with drawings and calculations before the structure construction may begin.

viii. If structure phasing or damaged stakes require significant resurveying during the life of the structure or project, provide revised layout drawing, restaking, new layout for the Engineer's verification and acceptance at no additional cost to the Owner.

Signs and Streetlights

i. Contractor Surveyor shall stake horizontal locations of all ground mounted, overhead and Type A and B ground-mounted signs and streetlights pole locations for Engineer's verification before obtaining S-dimensions or installation of streetlight conduit.

ii. Measure or calculate overhead and ground-mounted sign S-dimensions in accordance with the plans and the NCDOT *Manual for Construction Layout*.

iii. Stakeout streetlight stub locations for Duke Progress Energy streetlight pole installations according to the NCDOT Encroachment Agreement noted in Section 22000-Appendix and as required by Duke Progress Energy. Provide the Engineer any discrepancies of plan locations versus Encroachment Agreement prior to installation of streetlight conduit.

iv. Perform investigation of all proposed sign locations, streetlight locations and notify the Engineer of any obstructions, either existing or proposed, that may interfere with the proposed sign installation or streetlight installation by Duke Progress Energy.

v. For overhead and Type A & B signs, provide an 11" x 17" drawing depicting the theoretical finished section at each proposed overhead sign assembly location. Include within the submittal the roadway, shoulder and slope gradients. Include the proposed finish elevations of the edges of pavement, each lane line and the ground at each proposed sign footing location. Set a slope stake at each proposed overhead sign location to ensure the slopes are constructed as calculated and detailed in the above submittal.

vi. Submit sign information to the Engineer. Stake horizontal locations of all ground mounted and barrier mounted signs as part of the unit bid line item lump sum price established in the Itemized Proposal for “Construction Surveying”.

As-Built Survey

i. Conduct a field record survey of as-built project improvements by an NC Registered Professional Land Surveyor and provide resulting data to the project Engineer in print and digital formats. Maintain as-built plans daily to the satisfaction of NCDOT and City of Wilmington and Owner’s Representative.

ii. Upon substantial completion of all work, the Contractor shall provide submittal of two (2) sets of as-built plans to the Owner. As-Built set plans shall conform to the City’s Standard Specifications.

iii. Contractor shall coordinate with the Engineer and his representative during the life of the project in the production and data/recording of as-built plans that are acceptable to NCDOT. This will be considered a requirement for acceptance of the project for maintenance by NCDOT. This work shall be included in unit bid price for “Construction Surveying” as indicated in the Bid Proposal. The Contractor shall provide this final deliverable prior substantial completion.

iv. All mapped improvements shall be on an accurate graphical representation, neatly lettered, properly dimensioned and identified on a mylar reproducible tracing 22” x 34” in size at scale that matches the construction plans.

v. Identification and location of site improvements shall conform to the recommended standards of the North Carolina Licensing Board for Professional Engineers and Land Surveyors. Record Survey is to be provided by the Contractor.

a. Limits: The subject property as defined by the Contract Documents.

b. Control: Vertical control shall be based on the benchmarks on the site. Baselines shall be established in such a manner as to accurately locate spot elevations in a 50 foot minimum grid pattern. All top and toe slopes with centerline of draws and ditches shall be located.

c. Improvements: All planimetric information shall be tied to the established grid. Contours shall be drawn at a 1 foot interval with spot elevations at high and low points. Within the area to be surveyed, locate all improvements and identify the following:

- Finished grades.
- Any water and sewer utility work installed
- Revised roadway or bridge surveys or elevations different from plans.
- Curbing, walks and paving.
- Curb cuts and access drives.
- Storm drainage improvements (with invert elevations, rim elevations and pipe lengths).
- Curb ramps.
- All bridge data, vertical clearance data and other data required by NCDOT for acceptance of maintenance.

vi. Upon completion of record survey, submit in print and digital format to the Engineer for the Owner's record.

vii. No additional compensation will be provided for As-Built Surveys as these costs associated with this work will be considered incidental to "Construction Surveying" at the established line item unit price per lump sum identified in the Itemized Proposal.

Measurement and Payment

i. Payment at the contract lump sum price for "Construction Surveying" will be made for providing all construction layout, surveying, stakeout, and engineering as noted within this section as necessary for the proper construction operations to construct the project in accordance with the lines, grades, and dimensions detailed in the plans and provisions.

ii. The Contractor shall submit a certified statement each month indicating the percentage of "*Construction Surveying"* work completed. The Engineer will determine if the amount indicated is reasonably correct and the Engineer will pay accordingly on the next partial pay estimate.

iii. Establishment of baseline alignments or cross sectioning for borrow or grading along the project and any surveying within each borrow pit is incidental to "*Construction Surveying" and no direct payment will be made.*

iv. Such price and payment will be full compensation for construction surveying for all project improvements, coordination with Engineer of Record, stakeout, As-Built Plans, construction layout, furnishing competent surveying personnel, vehicles, mobilization, incidentals, record keeping, traffic control for surveying, surveying equipment, stakes, markings, reference points, dimensional sketches, surveying sketches, submittals, clearing limit delineations, independent surveying, surveying for relocation of utility conflicts, surveying for streetlight, layout for guardrail improvements, traffic control baseline layout and stakeout, locations, surveying calculations, stakeout records, certifying as-builts, electronic files, manuscripts, records, materials, staking and establishing of right-of-way and easements, and all incidentals necessary to satisfactorily perform "Construction Surveying".

v. Such price and payment at the lump sum unit price as established in the Itemized Proposal for "Construction Surveying" will be full compensation for any independent, supplemental surveying or investigative surveying and shall include but not be limited to furnishing personnel; all surveying equipment, stakes, sketches, calculations, stakeout records and as-builts; and any materials, staking of easements and rights of way and equipment necessary to perform the supplement surveying or investigative surveying.

vi. Partial payments for the item of "Construction Surveying" will be made on each particular payment estimate based upon the percentage complete of the item of "Construction Surveying" as determined by the Engineer.

vii. Compensation for "Construction Surveying" will also be full and completion compensation for the stakeout of the roadway survey alignments for intermediate cross sections when deemed necessary by the Engineer or Contractor.

viii. If the Engineer determines intermediate cross sections are not necessary for computing partial payments (i.e., lump sum comprehensive grading), the intermediate stakeout of the survey line is incidental to the work and no additional compensation will be made.

ix. Payment will be made under: "Construction Surveying" at the established line item unit price bid Lump Sum as indicated in the Itemized Proposal.

SIDEWALK, DRIVEWAY, CURB AND GUTTER REMOVAL AND REPLACEMENT:

Care should be taken during construction to avoid damaging the existing sidewalk, curb and gutter and pavement outside the immediate construction area. If damaged, it shall be replaced in accordance with the NCDOT Standard Specifications for Roads and Structures and City of Wilmington standards without extra cost to the City. Prior to construction, the Contractor shall inspect the site and report to the City Engineer and the Engineer any damages existing before construction.

The Contractor shall be advised that when a portion of any area of concrete driveways, curb and gutter and pavement must be removed, all areas to be removed shall be defined by a machine-sawed joint prior to removal.

There will be no direct payment for the work covered by this provision. Payment at the contract unit prices for the various items in the contract will be full compensation for all work covered by this provision.

HIGH STRENGTH CONCRETE FOR DRIVEWAYS:

(11-21-00)(Rev. 1-16-24) 848 SP10 R02

Use high early strength concrete for all driveways shown in the plans and as directed by the Engineer. Provide high early strength concrete that meets the requirements of Article 1000-6 of the *Standard Specifications*.

Measurement and payment will be in accordance with Section 848 of the *Standard Specifications*.

PRICE ADJUSTMENT - ASPHALT BINDER FOR PLANT MIX:

SP (City of Wilmington)

There will be no price adjustment for asphalt binder for plant mix for this project.

ADJUSTMENT OF MANHOLES, METER BOXES, AND VALVE BOXES:

(7-1-95)(Rev. 1-16-24) 858 SP8 R97R

The Contractor's attention is directed to Article 858-3 of the *Standard Specifications*. Cast iron or steel fittings will not be permitted for the adjustment of manholes, meter boxes, and valve boxes on this project.

PVC PIPE:

SP (City of Wilmington)

Description

Furnish and install drainage pipe at locations and size called for in the contract documents. The work includes construction of joints and connections to other pipes, endwalls, and drainage structures.

Materials

Refer to Division 10 of the Standard Specifications:

Item	Section
Polyvinylchloride (PVC) Pipe	1032-8

Pipe Installation

Install pipe, pipe tees, and elbows in accordance with Section 300.

Measurement and Payment

Pipe will be measured and paid as the actual number of linear feet of pipe that has been incorporated into the completed and accepted work. Measurement of pipe will be made by counting the number of joints used and multiplying by the length of the joint to obtain the number of linear feet of pipe installed and accepted. Measurements of partial joints will be made along the longest length of the partial joint to the nearest 0.1 foot. Select bedding and backfill material will be included in the cost of the installed pipe.

Pipe End Sections, Tees, Elbows, and *Eccentric Reducers* will be incidental to the pipe length.

Payment will be made under:

Pay Item	**Pay Unit**
6" PVC Pipe (Includes Wyes, Tees, & Elbows)	Linear Foot

PROJECT SPECIAL PROVISONS

TRAFFIC CONTROL

The Contractor shall provide all traffic control devices and signs to warn the traveling public in accordance with the latest Traffic Control Manual for Construction and Maintenance. Two-way traffic shall be maintained at all times, unless otherwise required by the traffic control plan.

The Contractor shall indemnify and save harmless the City of Wilmington and all its officials, agents and employees from all suits, actions or claims of any character, name or description brought for or on account of any injuries or damages received or sustained on the project.

TRANSPORTATION MANAGEMENT PLAN:

SP (City of Wilmington)

Description

Furnish, install, maintain, relocate and remove temporary traffic control and pedestrian management devices as required by the plans or as directed by the Engineer. Install and maintain all temporary pavement markings and markers as shown on the plans or as directed by the Engineer. Remove all conflicting pavement markings and markers as directed in the project phasing notes or as directed by the Engineer.

All temporary traffic control devices and pedestrian control devices furnished by the Contractor shall remain the property of the Contractor, unless otherwise specified in the contract.

Materials

Refer to Division 10.

Item	Section
Temporary Pavement Markings (Paint)	1087
Traffic Control Devices	1089

Provide temporary traffic control devices that are listed on the NCDOT Approved Product List.

Construction Methods

Ensure all temporary traffic control devices and pedestrian management devices are inspected and approved before using them on the project. Install temporary traffic control devices, pedestrian management devices, and temporary pavement markings and remove conflicting pavement markings before construction operations begin and during the proper phase of construction. Maintain and relocate temporary traffic control devices and pedestrian management devices during the time they are in use as shown in the plans. Maintain all temporary markings during the time that they are in use. Keep all devices and markings in place as long as they are needed and immediately remove thereafter. When operations are performed in stages, install only those devices and markings that apply to the present conditions.

Maintenance and Inspection

Submit a proposed traffic control device and pedestrian management device maintenance schedule and checklist for approval before construction. Perform continuous maintenance and daily scheduled inspections of all traffic control and pedestrian management devices in use. Review and maintain all traffic handling measures and pedestrian management measures to ensure that adequate provisions are in place for public and workers' safety.

Maintenance activities include cleaning, repair, or replacement, and prompt disposal of temporary traffic control or pedestrian management devices that are damaged, torn, crushed, discolored, displaced or deteriorated beyond effectiveness.

Replace work zone traffic control devices deemed unacceptable according to the guidelines set forth in the American Traffic Safety Service Association's (ATSSA) Quality Guidelines for Work Zone Traffic Control Devices.

If the name and telephone number of the agency, Contractor or supplier is shown on the non-retroreflective surface of all channelizing devices, use letters and numbers that are non-reflective and not over 2 inches in height.

Failure to Maintain Traffic Control

Failure to maintain acceptable traffic control measures, temporary traffic control devices, pedestrian management measures, pedestrian management devices and temporary pavement markings may result in formal notification of noncompliance. Implement remedial action immediately for imminent danger situations as directed by the Engineer. Implement remedial action within 48 hours after notification of a safety issue that is not an imminent danger. See Articles 107- 21 and 108-7 of the *2018 Standard Specifications*.

Failure to comply may result in having the work performed with available forces and equipment. In cases of willful disregard for the safety of the public, the Engineer may proceed immediately to implement the measures necessary to provide the appropriate level of traffic control to ensure that the safety of all concerned parties is maintained.

Measurement and Payment

Payment at the contract lump sum price for the various items in the contract will be full compensation for all work covered by this specification.

Partial payments will be made on each payment estimate based on the following: 50% of the contract lump sum price bid will be paid on the first monthly estimate and the remaining 50% of the contract lump sum price bid will be paid on each subsequent estimate based on the percent of the project completed.

If the Contractor fails to maintain acceptable traffic control measures or temporary traffic control devices and the Engineer implements measures necessary to provide the appropriate level of traffic control, the actual cost of performing said work will be deducted from the monies due the Contractor on the contract.

PROJECT SPECIAL PROVISIONS

EROSION CONTROL

STABILIZATION REQUIREMENTS:

(3-11-16) S-1

Stabilization for this project shall comply with the time frame guidelines as specified by the NCG-010000 general construction permit effective August 3, 2011 issued by the North Carolina Department of Environment and Natural Resources Division of Water Quality. Temporary or permanent ground cover stabilization shall occur within 7 calendar days from the last land-disturbing activity, with the following exceptions in which temporary or permanent ground cover shall be provided in 14 calendar days from the last land-disturbing activity:

- Slopes between 2:1 and 3:1, with a slope length of 10 ft. or less
- Slopes 3:1 or flatter, with a slope of length of 50 ft. or less
- Slopes 4:1 or flatter

The stabilization timeframe for High Quality Water (HQW) Zones shall be 7 calendar days with no exceptions for slope grades or lengths. High Quality Water Zones (HQW) Zones are defined by North Carolina Administrative Code 15A NCAC 04A.0105 (25). Temporary and permanent ground cover stabilization shall be achieved in accordance with the provisions in this contract and as directed.

GENERAL EROSION CONTROL:

SP (City of Wilmington)

A. Temporary and permanent erosion control measures shall be provided for all land disturbing activities in accordance with the Contract Documents and/or an erosion control plan approved by the North Carolina Department of Environment and Natural Resources (NCDENR). Temporary measures shall be installed by the Contractor, then inspected by the Inspector and the NCDENR for compliance prior to any land disturbing activity. The inspection and approval process shall be required on each phase of construction. All permanent erosion control measures shall be incorporated into the work at the earliest practical time. All temporary measures shall be maintained until the permanent measures have taken effect. Temporary and permanent measures shall be coordinated to provide effective and continuous erosion control throughout the construction and post-construction period to minimize siltation of streams, lakes, reservoirs, and other impoundments, ground surfaces, and other property. These measures shall remain in effect until final approval for removal is given by the Inspector and/or the NCDENR at which time the Contractor shall remove all temporary erosion control measures at no additional cost to the Owner.

B. The Contractor shall be familiar with the applicable provisions of the Sedimentation Pollution Control Act of 1973, General Statutes, Chapter 113A, Article 4. The Contractor shall be responsible for incorporating conservation procedures necessary to comply with this act in minimizing erosion and sediment pollution associated with the construction of this project as directed by the Engineer.

C. The Contractor shall be financially responsible for any and all fines that result from the Contractor's failure to install and/or maintain erosion control measures in accordance with the Contract Documents.

D. The Contractor shall check all erosion and sediment control measures for stability and operation following each rainfall event, and no less than once per week. The Contractor shall make any needed repairs immediately to maintain all control measures as designed.

E. The Contractor shall clean out all sediment trapping devices when the device reaches 50% trap capacity and shall dispose of the sediment by spreading on the site in a protected area or by hauling away if not suitable for fill at no additional cost to the Owner.

TEMPORARY MEASURES:

SP (City of Wilmington)

A. Inlet Protection shall be installed around inlets and any other necessary locations as shown on the plans and as directed by the Engineer. Inlet protection shall be installed in accordance with the detail shown in the plans.

B. Tree Protection Fence shall be installed around the drip line of trees in the construction work area as shown on the plans and as directed by the Engineer. The tree protection fence shall be installed in such a manner that it prevents all construction activities from encroaching into the area inside the drip line of the tree. The material and installation specifications for the tree protection fence shall be approved for use by the Engineer prior to installation.

C. Construction Entrances shall be installed at all points of access to the construction site. Any access point, which does not have a construction entrance, shall be barricaded to prevent its use. Construction entrances shall be installed in accordance with *2018 NCDOT Roadway Standard Drawings*. Construction entrances shall be included in the unit bid price for "Mobilization."

D. Other Erosion Control Items in Contract shall be installed and paid for per NCDOT specifications at the contract unit price as indicated on the Itemized Proposal in the contract documents. Maintenance and silt excavation for these measures will be considered incidental to these items.

E. Basis of Payment: Payment for temporary erosion control measures shall be at the contract unit price for each item as indicated on the Itemized Proposal in the contract documents. These prices will be full compensation for all work covered by this section including but not limited to the labor, equipment, and materials for furnishing and installing all temporary erosion control measures indicated on the plans, and maintenance of the work throughout the life of the project as required by the Inspector.

PROTECTION OF EXISTING PLANTS:

SP (City of Wilmington)

The work under this item shall consist of the protection of selected trees, shrubs, or other woody plants. The plants protective fencing shall be made of untreated wood. Fencing shall encompass the plants to the drip-line. Deviations from this must be approved by the Engineer.

Plant protective fencing shall be installed prior to beginning any construction on this project. Plant protective fencing shall be constructed at the locations as directed by the Engineer and in accordance with City specification. The fencing shall be maintained in place until all construction operations in that particular area are complete.

At completion, only light grading equipment such as small agricultural tractors shall be allowed on the plants' roots. Fill dirt no deeper than two inches shall be allowed under the limb spread of any plant.

No building materials, dirt, or equipment shall be stored inside the protective fencing. Plants that die as a result of the Contractor's negligence shall be removed and replaced as directed by the Engineer at the Contractors expenses. The new plant shall be guaranteed for a year, planted in the proper season, and planted with approved arboricultural specifications.

The Contractor will be required to cooperate with other contractors, utility companies and others needing access to the project site as (approved by the Engineer) to complete the work.

TEMPORARY SEEDING AND MULCHING:

SP (City of Wilmington)

A. General:

i. After construction is complete in any area or phase of the project, the disturbed areas shall receive a permanent ground cover. Seeding and mulching shall be performed immediately behind construction. The Contractor shall provide permanent seeding in all disturbed areas as indicated in the Contract Documents. The Contractor shall adapt permanent seeding operations to protect and to accommodate any temporary seeding and soil and erosion control measures that may already be in place during the work period.

ii. When seeding must take place out of season for permanent grass the appropriate temporary seeding shall be done and the contractor shall be responsible for permanent seeding as specified in season at no additional cost to Owner.

iii. Contractor shall be responsible for turf maintenance through substantial completion. Slopes must be at 90% coverage at substantial completion review to be accepted. If not at 90% coverage, substantial completion will be delayed until the following growing season.

B. Site Preparation and Installation:

i. Ground Cover: All disturbed areas shall be dressed to a depth of five (5) inches. The top two (2) inches shall be pulverized to provide a uniform seedbed. Rake or

harrow the site to establish a smooth and level final grade. Soil particles should be no larger than marble size, and pea gravel size is even better. Agricultural lime shall be applied at the rate of 95 lbs./1000 sq. ft. immediately before plowing. Grass seed shall be applied at the rates outlined in Tables 1 and 2.

ii. 5-10-10 fertilizer shall be applied to all disturbed areas at a rate of 21 lbs./1000 sq. ft. Mulching shall consist of small grain straw applied at a rate of 70 lbs./1000 sq. ft. Mulched areas shall be tacked with asphalt or other approved method sufficient to hold the straw in place, at a rate of 150 to 200 gallons per ton of straw.

iii. If active construction ceases in any area for more than thirty (30) days, all disturbed areas must be seeded, mulched, fertilized and tacked at no additional cost to the Owner.

iv. Some areas may require temporary seeding due to an interruption of work exceeding thirty (30) days or seasonal restrictions as specified in the permanent seeding schedule, or a combination thereof. These areas shall be reseeded in accordance with the permanent seeding schedule. If temporary seeding is required due to Contractor delays, there will be no compensation for the temporary seeding. Temporary seeding shall be performed only at the direction of the Engineer or Inspector.

v. When seeding must take place out of season for permanent grass the appropriate temporary seeding shall be done and the contractor shall be responsible for permanent seeding as specified in season at no additional cost to Owner.

C. Cleanup and Inspection:

i. Upon completion of work, the Contractor shall remove from the site all equipment and other articles used. All excess soil, stone, and debris shall be removed and legally disposed of at no additional cost to the Owner. All work areas shall be left in a clean and neat condition. All damage to existing construction caused by landscaping operations shall be repaired to the satisfaction of the City at the Contractor's expense.

ii. Seeded areas shall be protected and replanted as necessary to establish a uniform stand of specified grass. Scattered bare spots, none of which shall be larger that one (1) square foot, will be allowed up to a maximum of 3% of the seeded area for each property. When seeded areas are ready for inspection, the maintained turf areas shall be neatly mowed to the uniform height of approximately two and one-half (2.5) inches. The lawns shall be considered established only when the specified grass is vigorous and growing well in addition to meeting the other requirements specified.

iii. An inspection of the completed seeding shall be made at the conclusion of the landscape work upon written notice requesting such inspection submitted by the

Contractor to the Engineer, at least ten (10) days prior to the anticipated date of inspection.

iv. A final inspection shall be performed when a satisfactory stand of seeded turf grass has been produced, upon written notice requesting such inspection submitted by the Contractor to the Engineer, at least ten (10) days prior to the anticipated date of inspection. If a satisfactory stand of turf has not been produced at the time of final inspection, necessary repairs shall be performed in conformance with the requirements of this section. Upon completion of these repairs, the seeded grass shall be reinspected upon written notice as above.

D. Basis of Payment:

i. Payment for establishing permanent and temporary ground cover shall be the actual amount of seeding installed and will be paid for at the unit price bid per acre or square yard as indicated on the Itemized Proposal in the contract documents for "Temporary Seeding and Mulching." These prices shall be full compensation for all work covered by this section including but not limited to furnishing all permanent and temporary seeding, mulching, fertilizing, tacking, site preparation, cleanup, maintenance, and warranty of work as specified.

ii. Distribution of Billing and Payments for "Temporary Seeding and Mulching" shall be made as follows:

a) Fifty percent (50%) of the total quantity of the seeding and mulching items on the Itemized Proposal on the first partial payment estimate after which the initial seeding has been completed and accepted.

b) Twenty-five percent (25%) of the total quantity of the seeding and mulching items on the Itemized Proposal on the first partial payment estimate made after which the initial establishment of grass and any required reseeding is complete.

c) Twenty-five percent (25%) of the total quantity of the seeding and mulching items on the Itemized Proposal on the first partial payment after the final establishment of grass and the project is one hundred percent (100%) complete.

TABLE 1		
SHOULDERS, SIDE DITCHES, SLOPES (For Slopes Between 2:1 and 3:1)		
Date	**Type**	**Planting Rate**
Mar 1 - June 1	Sericea Lespedeza (scarified) and	50 lbs./acre
Mar 1 - Apr 15	Add Tall Fescue or	120 lbs./acre
Mar 1 - June 30	Add Weeping Lovegrass or	10 lbs./acre
Mar 1 - June 30	Add Hulled Common Bermudagrass	25 lbs./acre
June 1 - Sept 1	***Tall Fescue and ***Browntop Millet or ***Sorghum-Sudan Hybrids	120 lbs./acre 35 lbs./acre 30 lbs./acre
Sept 1 - Mar 1	Sericea Lespedeza (unhulled/unscarified) and Tall Fescue	70 lbs./acre 120 lbs./acre
Nov 1 - Mar 1	Add Abruzzi Rye	25 lbs./acre
TABLE 2		
SHOULDERS, SIDE DITCHES, SLOPES (For Slopes 3:1 and Flatter)		
Date	**Type**	**Planting Rate**
Aug 15 - Nov 1	Tall Fescue	300 lbs./acre
Nov 1 - Mar 1	Tall Fescue and Abruzzi Rye	300 lbs./acre
Mar 1 - Apr 15	Tall Fescue	300 lbs./acre
Apr 15 - June 30	Hulled Common Bermudagrass	25 lbs./acre
July 15 - Aug 15	Tall Fescue and ***Browntop Millet or ***Sorghum-Sudan Hybrids	35 lbs./acre

Notes:
Consult Stormwater Management Engineer or Natural Resources Conservation Service (NRCS) for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those, which do well under local conditions; other seeding rate combinations may be possible but must be approved by the Engineer.

***Temporary - Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12 inches in height before mowing to keep fescue from being shaded out.

PERMANENT LAWN SEEDING AND MULCHING:

(10-16-18) SP (City of Wilmington)

A. General

i. The following information shall be applicable for all permanent lawn seeding. Permanent lawn seeding shall take place within all developed areas of disturbance including residential and commercial areas and shall be replaced in kind of existing material by the Contractor. An approved turf type tall fescue blend shall be used per the Contract Documents. Kentucky 31 is not an acceptable blend.

ii. When seeding must take place out of season for permanent grass the appropriate temporary seeding shall be done and the contractor shall be responsible for permanent seeding as specified in season at no additional cost to Owner.

iii. Contractor shall be responsible for lawn maintenance through substantial completion. Lawns must be at 90% coverage at substantial completion review to be accepted. If not at 90% coverage, substantial completion will be delayed until the following growing season.

B. Site Preparation:

i. Remove or kill any undesirable existing turf or vegetation. Herbicide spraying or other chemical treatment shall be approved by the Engineer prior to being used by the contractor. If preexisting turf or other vegetation is mixed with the soil to be reused, the contractor shall use best judgement in removing it or incorporating it into the soil during preparation.

ii. If topsoil was not used to reestablish the upper soil layer and the upper soil is heavy with high clay content, spread 1.5-2 inches of aged ground pine bark or bagged organic humus over the area to be repaired.

iii. For all grasses except centipede grass, apply per 1,000 square feet:
75 pounds of ground limestone and one of the following fertilizers:
40 pounds of 5-10-10; 20 pounds of 10-20-20; or 20 pounds of 8-8-8
or 10-10-10 in combination with 4 pounds of 0-46-0. Centipede grass prefers acidic soils and low levels of phosphorus and may not require the addition of lime and phosphorus.

iv. Incorporate lime and fertilizer (and pine bark if added) into the top 6 inches of the soil using a rototiller or by hand. Rototill or hand cultivate to well incorporate the amendments and get a uniform loosely textured soil of minimum 6-inch depth.

v. Rake or harrow the site to establish a smooth and level final grade. Soil particles should be no larger than marble size, and pea gravel size is even better. Hand raking to level the soil and work out hills and hollows. For areas larger than 100 sq. ft. allow rain or irrigate to settle the soil. In some situations, the Engineer may require rolling or cultipacking to firm the soil before seeding. Hand rake again to break up the crusty surface before seeding or planting.

C. Installation:

i. General:

a) Seed or plant the required grass according to Table 3.

b) The choice of turfgrass type, variety and propagation form shall be specified in the Contract Documents, as specified in the Itemized Proposal, or as designated by the Engineer.

c) Seed shall be tagged certified seed. Germination shall be a minimum of 95%. Seed shall be 98% pure with less than 2% other-crop seed or debris. Seed shall be free of noxious weed seed.

d) Sod, sprigs, plugs or other vegetative plant propagation materials shall be certified free of noxious weeds. Materials shall be in good health and vigor, free of disease or pests, or damage from dryness, adverse temperature, herbicides, fertilizer or other chemicals. Sprigs that are older than 48 hours are not acceptable regardless of condition.

e) The Contractor shall maintain a log of dates that sod, sprigs, plugs, or other seeding installation was completed for each individual property and shall notify the Engineer or Inspector of each day's progress.

ii. Seeding:

a) Sow the seed on freshly prepared soil. Ensure uniform coverage by using a centrifugal (rotary) or drop-type spreader. Areas larger than 100 sq. ft. shall be seeded with a minimum of two passes at the appropriate partial rate for each pass. For areas averaging greater 15 ft. width, apply half the seed in one direction and the other half at right angles to the first direction.

b) Apply a starter-type fertilizer to the soil surface for example, 10 pounds of 5-10-10 or 5 pounds of 10-20-20 per 1,000 square feet at the time of seeding.

c) Lightly cover the seed by hand raking or dragging with a mat or chain-link fence. Roll or tamp the soil lightly to firm the surface and provide good seed-to-soil contact.

d) Mulch grass seed with weed-free small grain straw or hay. Use one bale per 1,000 square feet for warm-season grasses and 1 to 2 bales for cool-season grasses. Stabilize small areas of mulch by rolling, watering or tacking with asphalt tacking spray. Twine netting can be used if wind displacement is a problem. If applied evenly and lightly, these materials need not be removed. Larger areas shall be stabilized by asphalt tacking spray or twine netting.

ii. Sprigging or Broadcasting:

a) Sprigging is the preferred method of installing bermudagrass in larger areas. For smaller areas of bermudagrass, sprigging and plugging are both good options. The less expensive is preferred. In some cases, sod may be less expensive or necessary due to circumstances.

b) Broadcasting sprigs uniformly over the entire area. Bermudagrass or zoysiagrass sprigs shall be broadcast at a minimum rate of 5 bushels (yards) of sprigs per 1,000 square feet. Up to 10 bushels (yards) may be used where very fast cover is desired. Press the sprigs into the top ½ to 1 inch of soil by hand, and then by using an old disk, set straight. In the case of very large areas use a sprigging machine, cultipacker, or roller. (Note - St. Augustine grass is seldom established through broadcasting because the stems are too sensitive.)

iii. Plugging:

a) Plugging is the preferred method of installing zoysia and St. Augustine except where sprigging or sod is less expensive or necessary due to circumstances.

b) Plugs shall consist of individual pieces of sod that are 2 inches or larger. The plugs shall be planted at grade on 8 inch centers.

iv. Sodding:

a) Lay sod as soon as possible after it has been harvested to prevent injury. Sod should be installed within 24 hours of delivery. While installing, take action as necessary to prevent heat buildup within the unlaid sod. Plan to unstack and unroll the sod if it cannot be laid within 48 hours. Soil should be moist (but not overly wet) before laying sod. Irrigating the soil several days before delivery is often adequate.

b) Start sodding from a straight edge (driveway or sidewalk) and butt strips together, staggering them in a brick-like pattern. Avoid stretching sod. Use a knife or sharp spade for trimming to fit irregularly shaped areas. Lay sod lengthwise across the face of slopes and peg or stake the pieces to prevent slippage. After the sod has been placed, roll the lawn to ensure good sod-to-soil contact.

c) Water sod immediately after installation. Soak sod thoroughly enough to penetrate soil below the newly installed sod to a minimum depth of two (2) inches. Contractor is responsible for insuring adequacy of water supply. The Contractor shall provide any necessary temporary means to properly water sod, including temporary pumps and sprinklers. Proper irrigation shall be required by the contractor until the project has been inspected and is accepted by the City of Wilmington. (The Contractor shall be required to obtain all applicable watering permits from the CFPUA prior to beginning watering activities.)

d) In some cases, sod can be laid in space planting "semi-checkerboard" fashion in order to lower costs. This method is described here assuming that the sod is cut into the standard 18 in. x 24 in. size. The first piece of sod is laid with the narrow side flush to a straight edge. This will start a row that is 24 in. wide. The next piece of sod is laid likewise but it is spaced 9 in. away and parallel to the first piece along the longer side. This is continued to make the first row. The next row is laid flush with the previous and in the same fashion except it laid offset by 9 inches, i.e., laid beginning at the centerline of the first piece of sod in the previous row. Subsequent rows are laid in this alternating pattern.

D. Cleanup and Inspection:

i. Upon completion of work, the Contractor shall remove from the site all equipment and other articles used. All excess soil, stone, and debris shall be

removed and legally disposed of at no additional cost to the Owner. All work areas shall be left in a clean and neat condition. All damage to existing construction caused by landscaping operations shall be repaired to the satisfaction of the City at the Contractor's expense.

ii. Seeded areas shall be protected and replanted as necessary to establish a uniform stand of specified grass. Scattered bare spots, none of which shall be larger than one (1) square foot, will be allowed up to a maximum of 3% of the seeded area for each property. When seeded areas are ready for inspection, the maintained turf areas shall be neatly mowed to the uniform height of approximately two and one-half (2.5) inches. The lawns shall be considered established only when the specified grass is vigorous and growing well in addition to meeting the other requirements specified.

iii. An inspection of the completed seeding shall be made at the conclusion of the landscape work upon written notice requesting such inspection submitted by the Contractor to the Engineer, at least ten (10) days prior to the anticipated date of inspection.

iv. A final inspection shall be performed when a satisfactory stand of seeded turf grass has been produced, upon written notice requesting such inspection submitted by the Contractor to the Engineer, at least ten (10) days prior to the anticipated date of inspection. If a satisfactory stand of turf has not been produced at the time of final inspection, necessary repairs shall be performed in conformance with the requirements of this section. Upon completion of these repairs, the seeded grass shall be reinspected upon written notice as above.

E. Basis of Payment:

i. Payment for establishing permanent lawn ground cover shall be the actual amount of seeding, sprigging or broadcasting, plugging, and/or sodding installed and will be paid for at the unit price bid per acre or square yard for the appropriate method and grass type as indicated on the Itemized Proposal in the contract documents for "Permanent Lawn Seeding and Mulching." This price shall be full compensation for all work covered by this section including but not limited to furnishing all permanent and temporary seeding, sprigging or broadcasting, plugging, sodding mulching, fertilizing, tacking, watering, site preparation, cleanup, maintenance, and warranty of work as specified.

ii. Distribution of Billing and Payments for "Permanent Lawn Seeding and Mulching" shall be made as follows:

a) Fifty percent (50%) of the total quantity of the seeding and mulching items on the Itemized Proposal on the first partial payment estimate after which the initial seeding has been completed and accepted.

b) Twenty-five percent (25%) of the total quantity of the seeding and mulching items on the Itemized Proposal on the first partial payment estimate made

after which the initial establishment of grass and any required reseeding is complete.

c) Twenty-five percent (25%) of the total quantity of the seeding and mulching items on the Itemized Proposal on the first partial payment after the final establishment of grass and the project is one hundred percent (100%) complete.

TABLE 3				
LAWN SEEDING (Cool- and Warm-Season Grasses)				
	Typical Planting Rate/1,000 sq. ft.			
Lawn Grass	**Planting Dates[1]**	**Seeds[2]**	**Space Planting[3]**	**Sprigging[4]**
Tall fescue	March 1 to Oct. 15 (Aug. 15 to Oct. 1 optimum)	6	-	-
Tall fescue/annual (winter) rye	Oct. 15 to March 1	6 fescue 1 rye		
Bermudagrass(seed)	Apr. 1 to Aug. 15	1 to 2	-	-
Bermudagrass (vegetative)	Apr. 15 to Aug. 30	-	5 [4]	5
Centipedegrass	March to July	0.25 to 0.50	5 [4]	-
Zoysiagrass	April to July	-	5 [4]	5
St. Augustinegrass	Apr. to July	-	5 [4]	-

Notes:

1 Sod consisting of cool-season grasses can be installed anytime the ground is not frozen. Sod consisting of warm-season grasses can be installed as long as soil temperature exceeds 55° F. (typically April 15 to Oct. 1)

2 Pounds of seed per 1,000 sq. ft.

3 Square yards of turf cut into 2-inch centers to plant 1,000 sq. ft.

4 Bushels of sprigs per 1,000 sq. ft. (1 sq. yd. of turf pulled apart is equivalent to 1 bushel of sprigs.)

LAWN TYPE APPEARANCE:

All areas adjacent to lawns must be hand finished as directed to give a lawn type appearance. Remove all trash, debris, and stones ¾" and larger in diameter or other obstructions that could interfere with providing a smooth lawn type appearance. These areas shall be reseeded to match their original vegetative conditions, unless directed otherwise by the Field Operations Engineer.

STOCKPILE AREAS:

The Contractor shall install and maintain erosion control devices sufficient to contain sediment around any erodible material stockpile areas as directed.

ACCESS AND HAUL ROADS:

At the end of each working day, the Contractor shall install or re-establish temporary diversions or earth berms across access/haul roads to direct runoff into sediment devices. Silt fence sections that are temporarily removed shall be reinstalled across access/haul roads at the end of each working day.

CRIMPING STRAW MULCH:

Crimping shall be required on this project adjacent to any section of roadway where traffic is to be maintained or allowed during construction. In areas within six feet of the edge of pavement, straw is to be applied and then crimped. After the crimping operation is complete, an additional application of straw shall be applied and immediately tacked with a sufficient amount of undiluted emulsified asphalt.

Straw mulch shall be of sufficient length and quality to withstand the crimping operation.

Crimping equipment including power source shall be subject to the approval of the Engineer providing that maximum spacing of crimper blades shall not exceed 8".

MOWING:

SP (City of Wilmington)

The minimum mowing height on this project shall be 4 inches.

CONCRETE WASHOUT STRUCTURE:

(01-03-19)

Description

Concrete washout structures are enclosures above or below grade to contain concrete waste water and associated concrete mix from washing out ready-mix trucks, drums, pumps, or other equipment. Concrete washouts must collect and retain all the concrete washout water and solids, so that this material does not migrate to surface waters or into the ground water. These enclosures are not intended for concrete waste not associated with wash out operations.

The concrete washout structure may include constructed devices above or below ground and or commercially available devices designed specifically to capture concrete wash water.

Materials

Item	Section
Temporary Silt Fence	1605

Safety Fence shall meet the specifications as provided elsewhere in this contract.

Geomembrane basin liner shall meet the following minimum physical properties for low permeability; it shall consist of a polypropylene or polyethylene 10 mil think geomembrane. If the minimum setback dimensions can be achieved the liner is not required. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Construction Methods

Build an enclosed earthen berm or excavate to form an enclosure in accordance with the details and as directed.

Install temporary silt fence around the perimeter of the enclosure in accordance with the details and as directed if structure is not located in an area where existing erosion and sedimentation control devices are capable to containing any loss of sediment.

Post a sign with the words "Concrete Washout" in close proximity of the concrete washout area, so it is clearly visible to site personnel. Install filter fence as directed for visibility to construction traffic.

The construction details for the above grade and below grade concrete washout structures can be found on the following web page link:

https://connect.ncdot.gov/resources/roadside/SoilWaterDocuments/ConcreteWashoutStructuredetail.pdf

Alternate details for accommodating concrete washout may be submitted for review and approval.

The alternate details shall include the method used to retain and dispose of the concrete waste water within the project limits and in accordance with the minimum setback requirements. (5 feet above groundwater, 50 feet from top of bank of perennial stream, other surface water body, or wetland.)

Maintenance and Removal

Maintain the concrete washout structure(s) to provide adequate holding capacity plus a minimum freeboard of 12 inches. Remove and dispose of hardened concrete and return the structure to a functional condition after reaching 75% capacity.

Inspect concrete washout structures for damage and maintain for effectiveness.

Remove the concrete washout structures and sign upon project completion. Grade the earth material to match the existing contours and permanently seed and mulch area.

Measurement and Payment

Concrete Washout Structure will be paid for per each enclosure installed in accordance with the details. If alternate details are approved, then those details will also be paid for per each approved and installed device.

Temporary Silt Fence will be measured and paid for in accordance with Article 1605 of the *Standard Specifications*.

No measurement will be made for other items or for over excavation or stockpiling.

Payment will be made under:

Pay Item	**Pay Unit**
Concrete Washout Structure	Each

PROJECT SPECIAL PROVISIONS

UTILITIES

INTERRUPTION OF WATER SERVICE:

The Contractor will be required to have all materials and equipment on the job site seventy-two (72) hours prior to any planned water service interruption. Existing water mains may be taken out of service for a maximum of 8 hours for each relocation, abandonment and/or re-connection unless otherwise directed by the Engineer. Coordination with the CFPUA is required to cut and plug the line at various locations shown on the plans. The Contractor will provide adequate work force during this time to complete the required connection and refill and return the existing water main to service. The City of Wilmington Fire Department shall be notified of any interruptions of water mains 72 hours prior to interruption.

The Contractor will be required to dispose of any water from the isolated main and to dispose of air during the filling operation. The Contractor shall not operate any valves on the existing mains unless as directed by the Engineer. The CFPUA will not be responsible for delays, rescheduling, etc., resulting from incomplete isolation of the mains.

The CFPUA Inspector, in conjunction with the contractor, will be responsible for notifications of all customers affected by the interruption of water, sewer, or power service. Service interruptions shall be scheduled by CFPUA at a time most convenient to the public. Work may be required at night, weekends and/or holidays, as determined by the City. Customers shall be notified at least 72 hours (not including weekends/holidays) prior to any interruption of service.

There will be no direct payment for the work covered by this provision. Payment at the contract unit prices for the various items in the contract will be full compensation for all work covered by this provision.

ADJUSTMENT OF SANITARY SEWER CLEAN-OUT:

SP (City of Wilmington)

Description

This work consists of all work necessary to adjust and/or replace an existing sanitary sewer cleanout and cover with a new cleanout cover matching proposed grades in accordance with these provisions, the plans, and as directed.

Materials

Replace existing clean out riser with 4” DI or other approved material from CFPUA. Provide a traffic bearing cleanout box and cover in traffic bearing areas. In all other areas install a countersunk brass cover. Provide all materials necessary for a complete installation using materials in accordance with CFPUA Specifications and details.

Construction Methods

Remove and dispose of existing cleanout riser pipe and install new DI riser pipe, countersunk brass cover, and/or a traffic bearing cleanout cover flush with proposed grades.

Measurement and Payment

The replace and/or adjustment of cleanout listed in the pay items will be measured and paid for per each. Such price and payment will be full compensation for all work covered by this provision including but not limited to all piping, fittings, connections, certifications, and appurtenances. All other miscellaneous items necessary to complete the installation are considered incidental.

Payment shall be made under:

Pay Item	**Pay Unit**
Adjustment of Sanitary Sewer Clean-out	Each

UTILITY CONNECTIONS:

Make connections between existing and proposed utilities at times most convenient to the public, without endangering the utility service, and in accordance with the owner's requirements. Make connections on weekends, at night, and on holidays if necessary. Should the position of any pole, pipe, conduit, or other structure require removal or adjustment, the Engineer will coordinate the change with the owner of the obstructions or a representative of the owner. There will be no direct payment for the work covered by this provision.

Payment at the contract unit prices for the various items in the contract will be full compensation for all work covered by this provision.

WORK ASSOCIATED WITH WATER AND SANITARY SEWER UTILITIES:

All water and sanitary sewer utilities and appurtenances are owned and maintained by the Cape Fear Public Utility Authority (CFPUA). All work associated with water and sanitary sewer utilities shall be in compliance with the latest revision of all applicable CFPUA requirements and specification sections which are available on the CFPUA website (https://www.cfpua.org/763/CFPUA-Technical-Standards).

See proposed plans for utility work and details.

See Technical Specifications – CFPUA

PROJECT SPECIAL PROVISIONS

INCIDENTALS

PRIVATE FENCE - Wood (6322 Greenville Loop Rd)

SP (City of Wilmington)

Description

This work shall consist of removing and installing a new private fence at the location shown in the Plans.

Materials

See detail specifications of the existing fence below. Contractor shall review existing fence in the field prior to bidding to ensure all details are known and understood. An example picture of the style and color are also provided. The intent of this specification is for the Contractor to construct a fence that matches what is existing onsite. Color, dimensions, and style of the fence will be considered in the Engineer's decision as to whether a proposed system is an "approved equal." *Note: Fence construction will be phased to where proposed fence is constructed prior to existing fence begin removed due to privacy, safety, and security of the property owner.* **Contractor to also notify the property owner at least 7 days ahead of any work on the fence.**

The following are the specs for the proposed private fence at the above referenced address:

- Contractor to match fence heights at tie-ins; Fence Top should be level with any necessary dop downs per bottom grades;
- Fence height: 7'-3" at the diagonal corner and 6'-9"+/- parallel to Greenville Loop Rd
- Fence lumber: all pressure treated wood
- Nails: ringed stainless steel, 16d for the 2x's and smaller for 1x's length as req'd.
- Fence Posts: 5x5x10' set in concrete 24"-36" deep, 7'-3" oc +/-, height trimmed uniformly
- Outside Rails: Bottom rail 2x6, top rail 2x4 (no middle rail)
- Vertical boards: 1x6's board on board, 1" +/- overlap each side
- Interior horizontal trim boards: 1x4 top boards, 1x6 bottom boards
- Top cap boards: 5/4 x 6's
- Post caps: prefabricated wood to fit 5x5 posts
- Stain Type: Outdoor/Wood Stain to match existing fence color as closely as possible
- Stain Standard Color: Match; To be approved by project Engineer
- Detail photos below for existing fence

Construction Requirements

Embedment of fence posts shall conform to above requirements; any revisions or adjustments to the above specifications should have project engineer approval.

The Contractor shall be responsible for protecting the fence components from damage during storage, handling, installation, and subsequent construction operations. Damage to fence components shall be grounds for rejection of the work. Stain to be added to fence after wood is ready to receive stain based on the chosen stain manufactures requirements.

Method of Measurement and Basis of Payment

The quantity of Private Fence shall be measured on the lump sum basis as shown on the plans and of fencing installed complete and accepted. The quantity of Private Fence shall be paid for at the contract unit price per lump sum for "Private Fence" with specified 'Type' & 'Property Address'. The contract unit price shall be full compensation for all time, labor, concrete, and materials needed to complete the work covered in this section.

Payment will be made under:

Pay Item	**Pay Unit**
Private Fence – Wood (6322 Greenville Loop Rd)	Lump Sum

PRIVATE FENCE – Vinyl 3-Rail White (6200 Twin Magnolias Ln)

SP (City of Wilmington)

Description

This work shall consist of removing and installing a new private fence at the location shown in the Plans.

Materials

See detail specifications of the existing fence below. Contractor shall review existing fence in the field prior to bidding to ensure all details are known and understood. An example picture of the style and color are also provided. The intent of this specification is for the Contractor to construct a fence that matches what is existing onsite. Color, dimensions, and style of the fence will be considered in the Engineer's decision as to whether a proposed system is an "approved equal." *Note: Fence construction will be phased to where proposed fence is constructed prior to existing fence begin removed due to privacy, safety, and security of the property owner.* **Contractor to also notify the property owner at least 7 days ahead of any work on the fence.**

Construction Requirements

Embedment of fence posts shall conform to the fence supplier's requirements; any revisions or adjustments to the above specifications should have project engineer approval.

The Contractor shall be responsible for protecting the fence components from damage during storage, handling, installation, and subsequent construction operations. Damage to fence components shall be grounds for rejection of the work.

Method of Measurement and Basis of Payment

The quantity of Private Fence shall be measured on the lump sum basis as shown on the plans and of fencing installed complete and accepted. The quantity of Private Fence shall be paid for at the contract unit price per lump sum for "Private Fence" with specified 'Type' & 'Property Address'. The contract unit price shall be full compensation for all time, labor, concrete, and materials needed to complete the work covered in this section.

Payment will be made under:

Pay Item	**Pay Unit**
Private Fence – Vinyl 3-Rail White (6200 Twin Magnolias Ln)	Lump Sum

CONCRETE FLUME:

06/12/2024 SP (City of Wilmington)

At locations shown in the plans, construct concrete flume in accordance with the details in the plans. Use materials meeting the requirements of Sections 825, 848, 850, 1070 of the current NCDOT Standard Specifications except the concrete must be Class B or of higher compressive strength.

Concrete Flume will be measured and paid per each concrete flume completed, approved, and accepted by the City. Such price and payment will be full compensation for all materials, labor, equipment, tools, and any other incidentals required to complete the work satisfactorily.

Pay Item	**Pay Unit**
Concrete Flume	Each

FLEXIBLE PAVEMENT:

06/12/2024 (City of Wilmington)

Description

Furnish and install flexible pavement per the manufacturer's recommendations with the materials shown and at the location called for and per the detail in the plans.

Materials

Flexible pavement shall be black in color by Flexi-pave, Porous Pave, Rubberway or an

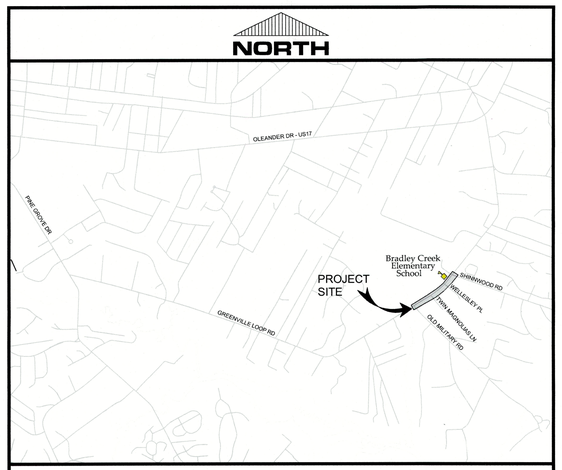
approved equal. Refer to the detail in the plans. The base course shall be washed crushed stone for porous application. The installation shall be per the manufacturer's recommendation.

Measurement and Payment

The replace and/or adjustment of cleanout listed in the pay items will be measured and paid for per each. Such price and payment will be full compensation for all work covered by this provision including but not limited to all piping, fittings, connections, certifications, and appurtenances. All other miscellaneous items necessary to complete the installation are considered incidental.

Payment shall be made under:

Pay Item	**Pay Unit**
Flexible Payment	Square Yards



VICINITY MAP
NOT TO SCALE
NEW HANOVER COUNTY, NC

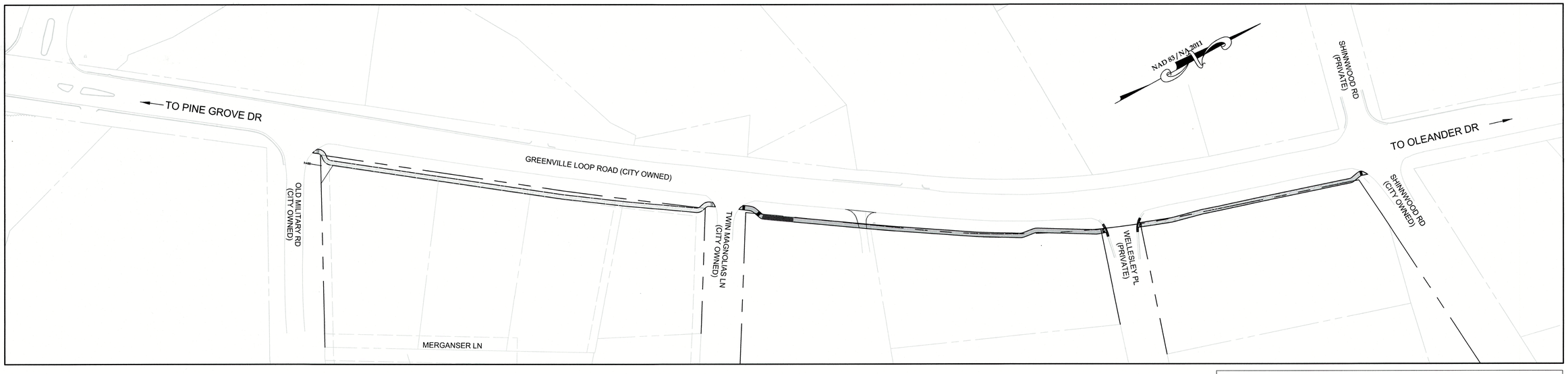
GREENVILLE LOOP ROAD SIDEWALK

COW PROJECT: 2TRSW2310

LOCATION: GREENVILLE LOOP RD FROM OLD MILITARY RD TO SHINNWOOD RD

TYPE OF WORK: SIDEWALK, GRADING AND DRAINAGE

100% PLANS



MAYOR - Bill Saffo

CITY MANAGER - Anthony Caudle

INDEX OF SHEETS	
SHEET NO.	**DESCRIPTION**
1	TITLE SHEET AND INDEX OF SHEETS
2	LEGEND, LIST OF STANDARD DRAWINGS, AND GENERAL NOTES
CD-1 THRU CD-3	TYPICAL SECTIONS AND CONSTRUCTION DETAILS
C-1 THRU C-2	PLAN AND PROFILE SHEETS
EC-1 THRU EC-5	EROSION CONTROL PLANS
X-1 THRU X-4	CROSS SECTIONS

GRAPHIC SCALES

PLAN: 20' 10' 0 20'

PROFILE: 20' 10' 0 20' HOR.

2' 1' 0 2' VER.

DATE OF SURVEY:	JANUARY, 2020
SURVEY-EXISTING COND.	STEWART 2018 EASTWOOD RD WILM, NC 910-796-0145
SURVEY-PROPERTY/ROW	CITY OF WILMINGTON
DRAWN:	_____ __, 2021 MEA
CHECKED:	PJB/MEA

DESIGN DATA

ADT 2017 = N/A

ADT 2040 = N/A

DESIGN SPEED = N/A

FUNC. CLASS: N/A

CITY STANDARDS AND SPECS

DENISE L. FREUND, P.E.
PROJECT ENGINEER

JONATHAN RHYNE
PROJECT DESIGN ENGINEER

PLANS PREPARED BY:

WILMINGTON
NORTH CAROLINA
Engineering Department
212 Operations Center Dr. • Wilmington NC 28412 • (910) 341-7807

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028597 DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 13:48:48 EST

P.E.

March 27, 2025
DATE

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

LEGEND

PUE PUE PUE	PERMANENT UTILITY EASEMENT	WM	WATER METER
TCE TCE	TEMPORARY CONSTRUCTION EASEMENT		FIRE HYDRANTS
PDE PDE PDE	PROPOSED DRAINAGE EASEMENT		POWER POLE
TPF TPF TPF	TREE PROTECTION FENCE	T	POWER TRANSFORMER PAD
RW RW RW	PROPOSED RIGHT OF WAY LINE		GUY WIRE
C F C	SLOPE STAKE LINE, CUT/FILL	EB	POWER PEDESTAL
W W	WATER LINE		TELEPHONE PEDESTAL
	STORM DRAIN LINE (SD)	1	PARCEL NUMBER
SS SS	SANITARY SEWER LINE (SS)		SIGN
FM FM	FORCE MAIN (SS)		TRAVERSE POINT
FO FO	FIBER OPTIC LINE	CS	CENTERSTONE
T T	TELECOM LINE		CONCRETE MONUMENT
OHW	OVERHEAD ELECTRIC LINE		IRON PIPE SET
G	NATURAL GAS LINE		IRON PIPE FOUND
	EXIST RIGHT OF WAY LINE		TREE
X X X	EXIST FENCE		
	FIBER OPTIC PEDESTAL		
MH	MANHOLE		
S	SANITARY SEWER MANHOLE		
	MAIL BOX		
	WATER VALVE		

LIST OF STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AND ANY OTHER APPLICABLE STANDARDS WITHIN THE "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N. C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD NO.	DESCRIPTION
200.02	METHOD OF CLEARING - METHOD II
225.02	GUIDE FOR GRADING SUBGRADE - SECONDARY AND LOCAL
840.72	PIPE COLLAR
904.10	ORIENTATION OF GROUND MOUNTED SIGNS
904.50	MOUNTING OF TYPE 'D', 'E', AND 'F' SIGNS ON 'U' CHANNEL POSTS

THE FOLLOWING CITY OF WILMINGTON STANDARDS AS THEY APPEAR IN THE CONSTRUCTION DETAILS SECTION OF THE PLANS ARE APPLICABLE TO THIS PROJECT.

STD NO.	DESCRIPTION
1-07	PIPE TRENCH TYPICAL
2-17	GUIDELINES FOR BEDDING DETAILS, STORMSEWER CLASSES (B & C)
2-100	PIPE COLLAR
3-10	SIDEWALK
3-104	GUIDELINES FOR SEDIMENT CONTROL BMPS
15-03	STREET AND TRAFFIC SIGNS REFERENCE DETAIL
15-09	TREE PROTECTION DURING CONSTRUCTION

SITE NOTES

ALL DIMENSIONS ARE IN RADII, EDGE OF PAVEMENT, TO CENTERLINE, CENTER TO CENTER ON STRIPES, AND/OR TO FACE OF CURB, UNLESS OTHERWISE NOTED.

PROVIDE CONSTRUCTION JOINTS IN CONCRETE WALKWAYS PER CITY OF WILMINGTON SPECIFICATIONS.

CONCRETE PADS AND WALKWAYS; UNLESS OTHERWISE NOTED, ARE 3000 PSI, OF 4" THICKNESS.

CROSSWALKS SHALL BE CONSTRUCTED OF THERMOPLASTIC MATERIALS AND CONSTRUCTED IN ACCORDANCE WITH NCDOT SPECIFICATIONS. CONTRACTOR TO INSTALL CROSSWALKS IN SUCH A MANNER THAT CROSSWALKS ARE ALIGNED BETWEEN HANDICAP/WALKWAY ACCESS POINTS OR PERPENDICULAR TO THE ROADWAY/DRIVE LANE. REFER TO PAVEMENT MARKING PLANS FOR LOCATION, IF APPLICABLE.

ALL SIGNS AND PAVEMENT MARKINGS ARE TO MEET MUTCD (MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES) AND NCDOT STANDARDS.

CONTRACTOR TO GRADE FILL/CUT SLOPES TO TIE INTO EXISTING GROUND AND AVOID PONDING.

DEMOLITION NOTES

THE CONTRACTOR SHALL NOTIFY THE CITY PROJECT MANAGER AND CAPE FEAR PUBLIC UTILITY PRIOR TO STARTING WORK.

THE CONTRACTOR SHALL NOT MAKE ANY LANE CLOSURES OR CHANGES TO THE EXISTING TRAVEL PATTERNS ON ANY PUBLIC STREET WITHOUT PRIOR APPROVAL FROM THE CITY OF WILMINGTON.

THE CONTRACTOR IS RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL REQUIREMENTS REGARDING REMOVAL AND DISPOSAL OF MATERIALS AND DEBRIS.

ALL DEMOLITION WORK WILL BE COORDINATED BY CONTRACTOR.

CITY OWNED STREETLIGHTS TO BE REMOVED BY THE CITY OF WILMINGTON BUT STREETLIGHT FOUNDATIONS AND WAYFINDING SIGN FOUNDATIONS SHALL BE REMOVED BY THE CONTRACTOR DURING GRADING OPERATIONS.

RELOCATION OF EXISTING UTILITIES TO BE COORDINATED WITH THE LOCAL UTILITY PROVIDER(S).

CLEANOUTS AND METERS LOCATED IN AREAS OF DEMOLITION OR SUBSEQUENT CONSTRUCTION THAT ARE TO REMAIN, SHALL BE PROTECTED FROM DAMAGE AND RAISED TO FLUSH WITH NEW GRADE.

ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE DISPOSED OF LEGALLY OFFSITE UNLESS OTHERWISE NOTED ON PLANS.

ALL PAVEMENT MARKINGS USED FOR PROJECT SHALL BE NCDOT STANDARD THERMOPLASTIC PAVEMENT MARKINGS UNLESS OTHERWISE NOTED ON PLANS.

ALL WORK MUST BE COMPLETED WITHIN CONSTRUCTION LIMITS SHOWN ON PLANS.

REMOVE EXISTING CONCRETE (WHERE REQUIRED) TO FIRST COLD JOINT OR SAWCUT TO OBTAIN A CLEAN EDGE FOR NEW CONSTRUCTION. SAW CUT EXISTING ASPHALT DRIVE AT LIMITS OF NEW CURBING TO OBTAIN A CLEAN EDGE.

CONTRACTOR SHALL RESTORE THE LAY-DOWN AND STAGING AREA TO ORIGINAL CONDITIONS AND TO THE SATISFACTION OF THE OWNER, PRIOR TO DEMOBILIZATION AT THE CONCLUSION OF THE PROJECT.

CLEAN SOILS SHALL BE UTILIZED FOR BACKFILL COMPACTION OF THESE SOILS PERFORMED IN ACCORDANCE WITH SPECIFICATIONS AND DRAWINGS.

ALL GRAVEL TO BE REMOVED (SURFACE OR SUBSURFACE) SHALL BE STOCKPILED AND REUSED ON SITE WHERE POSSIBLE IF IT CONFORMS TO SPECIFICATIONS AND DRAWINGS.

ALL ITEMS DESIGNATED TO BE REMOVED SHALL BE REMOVED COMPLETELY, INCLUDING ALL SUBGRADE MATERIALS DIRECTLY ASSOCIATED WITH ITEMS TO BE REMOVED.

SHEET NOTES

EXISTING UTILITIES AND STRUCTURES SHOWN, BOTH UNDERGROUND AND ABOVE, ARE BASED ON A FIELD SURVEY PERFORMED BY CITY OF WILMINGTON AND THE BEST AVAILABLE RECORD DRAWINGS. THE CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES, UNDERGROUND LINES, AND STRUCTURES AS NECESSARY TO AVOID DAMAGING OR DESTROYING EXISTING SERVICES.

ALL DEMOLITION, AND ANY SUBSEQUENT CONSTRUCTION, SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS SET FORTH AND APPROVED BY THE CITY OF WILMINGTON. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS. ALL TREE PROTECTION FENCING SHALL REMAIN IN PLACE DURING CONSTRUCTION.

TRAFFIC CONTROL FOR ANY WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL BE PERFORMED IN COMPLIANCE WITH STANDARDS OF THE NORTH CAROLINA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.

THE CONTRACTOR, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATIONS OF WASTE MATERIALS OR RUBBISH CAUSED BY CONTRACTOR EMPLOYEES OR THEIR WORK. ALL DEBRIS SHALL BE REMOVED FROM THE PROJECT SITE ON A DAILY BASIS. DO NOT USE SIDEWALK TRASH CANS OR BUSINESS DUMPSTERS AROUND SITE.

IF DEPARTURES FROM THE DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREOF SHALL BE SUBMITTED TO THE OWNER FOR REVIEW. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER.

THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING THE ACTUAL AND EXACT LOCATION, SIZE AND MATERIAL COMPOSITION OF ANY EXISTING WATER OR SEWER SERVICE PROPOSED FOR CONNECTION OR USE ON THIS PROJECT. THE RELOCATION OF ANY UTILITY SERVICES REQUIRED TO COMPLETE ANY PORTION OF THESE CONSTRUCTION PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

UTILITY NOTES

CONTRACTOR SHALL NOTIFY "NORTH CAROLINA ONE CALL" (TELEPHONE 1-800-632-4949) AT LEAST 72 HOURS PRIOR TO BEGINNING CONSTRUCTION OR EXCAVATION TO HAVE EXISTING UTILITIES LOCATED. CONTRACTOR TO CONTACT LOCAL UTILITIES THAT PROVIDE THEIR OWN LOCATOR SERVICES INDEPENDENT OF "NORTH CAROLINA ONE CALL."

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND/OR RELOCATION OF ALL EXISTING UTILITIES IN COORDINATION WITH THE APPROPRIATE UTILITY, AGENCY, OR COMPANY.

ALL UTILITIES THAT ARE LOCATED WITHIN LIMITS OF DISTURBANCE SHALL BE SET SO THAT TOPS/RIMS ARE FLUSH WITH FINISHED GRADE OF ROADWAY AND SIDEWALK. LOCATIONS AND SIZES OF EXISTING PUBLIC AND PRIVATE UTILITIES SHOWN ON THESE PLANS ARE FROM CITY AND UTILITY COMPANY RECORDS ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR FIELD LOCATING ALL UTILITIES AND FOR DAMAGES RESULTING FROM FAILURE TO DO SO.

CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE CITY AND CAPE FEAR PUBLIC UTILITIES FOR ANY ADDITIONAL INFORMATION ON EXISTING WATER AND SEWER UTILITIES.

LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXACT LOCATION, ORIENTATION, AND ELEVATION OF EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION OR ORDERING MATERIALS. NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.

CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.

GENERAL NOTES

SIDE ROADS:
THE CONTRACTOR WILL BE REQUIRED TO DO ALL NECESSARY WORK TO PROVIDE SUITABLE CONNECTIONS WITH ALL ROADS, STREETS, AND DRIVES ENTERING THIS PROJECT. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE FOR THE PARTICULAR ITEMS INVOLVED.

UTILITIES:
UTILITY OWNERS ON THIS PROJECT ARE:

POWER - DUKE ENERGY	ALEX CRAIG - 910 399 3081
COMMUNICATION - SPECTRUM	STEVE BARNETTE - 910 772 5755
COMMUNICATION - AT&T	CHRISSY COSTON - 910 341 7664
GAS - PIEDMONT NATURAL GAS	ROSS WILCOX - 910 251 2808
WATER/SEWER - CFPUA	DAVID DAILEY - 910 332 6626
SIGNS AND PAVEMENT MARKINGS - CITY OF WILMINGTON	RANDALL GLAZIER - 910 341 0069

ANY RELOCATION OF EXISTING UTILITIES WILL BE ACCOMPLISHED BY OTHERS, EXCEPT AS SHOWN ON THE PLANS.

CURB RAMPS:
CURB RAMPS ARE SHOWN ON THE PLANS AT APPROXIMATE LOCATIONS. THE MAXIMUM SLOPE IS 12:1 FOR ALL CURB RAMPS. CITY INSPECTOR TO REVIEW ALL RAMP FORMS BEFORE CONCRETE POURS.

SAFETY:
PEDESTRIAN AND BICYCLE SAFETY MUST BE MAINTAINED AT ALL TIMES BY ADEQUATE PROJECT LIMITS, FENCING, AND SIGNAGE.

EROSION CONTROL:
THE FINAL SIZE AND LOCATION OF ALL EROSION CONTROL DEVICES MAY BE ADJUSTED BY THE ENGINEER IN THE FIELD. THE CONTRACTOR SHOULD CONSULT WITH THE ENGINEER PRIOR TO PLACING EROSION CONTROL MEASURES.

TRAFFIC CONTROL:
TRAFFIC CONTROL GENERAL NOTES, DETAILS, AND A LIST OF STANDARDS ARE INCLUDED IN THIS PLAN SET.
ALL TRAFFIC CONTROL DEVICES AND OPERATIONS SHALL CONFORM TO NCDOT 2018 ROADWAY STANDARD DRAWINGS FOR TRAFFIC CONTROL.

OTHER:
CONTRACTOR SHALL COORDINATE WITH THE CITY OF WILMINGTON SIGNS AND MARKINGS FOR CITY INSTALLATION OR MODIFICATION OF PEDESTRIAN SIGNAGE FOR PROJECT.

ALL PAVEMENT MARKINGS MUST BE APPROVED BY CITY OF WILMINGTON SIGNS AND MARKINGS PRIOR TO TEMPORARY OR PERMANENT PLACEMENT.

CONTRACTOR SHALL MAINTAIN SAFE ACCESS TO EACH BUSINESS. BOARDWALKS, BARRICADES, SIGNAGE, ETC. SHALL BE UTILIZED TO SAFELY CHANNELIZE PEDESTRIAN TRAFFIC THROUGH A WORK ZONE. THIS WORK SHALL BE INCIDENTAL TO THE PROJECT AND THERE WILL BE NO PAY ITEM FOR THIS WORK.

CONTRACTOR SHALL WORK ONLY ON ONE SIDE OF THE ROAD AT A TIME.

THE CONTRACTOR SHALL KEEP THE ROADWAY AND SIDEWALKS CLEAN OF DEBRIS THROUGHOUT THE ENTIRE DURATION OF THE PROJECT. THE CITY WILL INSPECT THE STREETS AND SIDEWALKS PERIODICALLY TO ENSURE THIS IS BEING COMPLETED. THIS WORK WILL BE INCIDENTAL TO THE PROJECT AND THERE WILL BE NO PAY ITEM FOR THIS WORK.

CONTRACTOR SHALL COORDINATE ALL WATER AND SEWER WORK WITH THE CAPE FEAR PUBLIC UTILITIES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE POWER COMPANY FOR ANY ADDITIONAL SUPPORT OF EXISTING POWER POLES AS REQUIRED FOR TRENCH EXCAVATION. ALL COSTS OF SUCH WORK SHALL BE PAID BY THE CONTRACTOR.

THE CONTRACTOR SHALL INSTALL ALL STREET SIGNS AS REQUIRED BY CITY OF WILMINGTON SIGNS AND MARKINGS ALONG CITY STREETS.

ALL PAVEMENT CUTS SHALL BE SAW CUT ALONG A STRAIGHT CONTINUOUS LINE. CURBS AND CONCRETE DRIVEWAYS SHALL BE REPLACED TO THE FIRST EXPANSION JOINT BEYOND THE TRENCH EXCAVATION LIMITS AND TO THE FULL WIDTH. CURBS AND CONCRETE DRIVEWAYS SHALL MATCH EXISTING.

ALL MATERIAL CLEARED AND GRUBBED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK, SUCH AS TREES, VEGETATION, FENCING, ETC., SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE AT A STATE APPROVED DISPOSAL SITE, UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL RECEIVE CITY APPROVAL FOR ANY LANDSCAPE REMOVAL NOT SHOWN ON PLANS.

CONTRACTOR SHALL MAINTAIN A MEANS FOR INGRESS/EGRESS TO EACH PROPERTY AT ALL TIMES.

CONTRACTOR SHALL NOTIFY RESIDENTS AT LEAST 7 DAYS PRIOR TO CONSTRUCTION THAT CONSTRUCTION ACTIVITY WILL TAKE PLACE IN THEIR AREA.

WHERE THE CONTRACTOR DETERMINES THAT ENCROACHMENT ONTO PRIVATE PROPERTY IS NECESSARY, AND AN EASEMENT HAS NOT BEEN PROVIDED, THE CONTRACTOR SHALL CONTACT INDIVIDUAL PROPERTY OWNERS AND OBTAIN WRITTEN APPROVAL FOR THAT ENCROACHMENT. A COPY OF THIS APPROVAL SHALL BE PROVIDED TO THE ENGINEER.

REV. NO.	REVISIONS	DATE

DATE: JUNE, 2024
PROJECT NUMBER: 2TRSW2310
DWG PATH/FILE NAME:

PLANS PREPARED BY:
CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr. • Wilmington, NC 28412 • (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 15:48:57 EST
P.E.
March 27, 2025
DATE

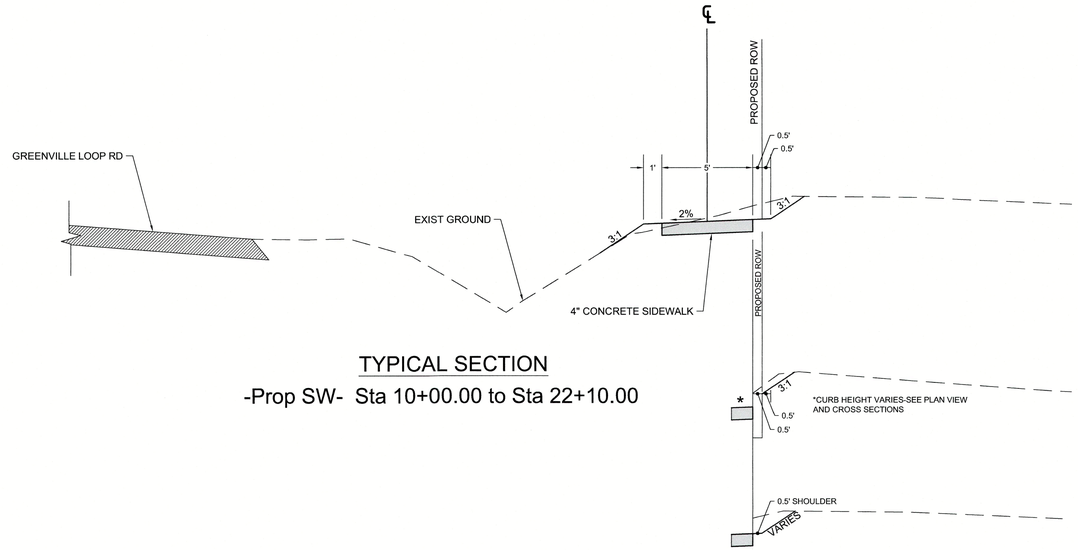
GREENVILLE LOOP ROAD SIDEWALK

LEGEND, LIST OF STANDARD DRAWINGS, AND GENERAL NOTES

NTS

SHEET 2

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG



TYPICAL SECTION

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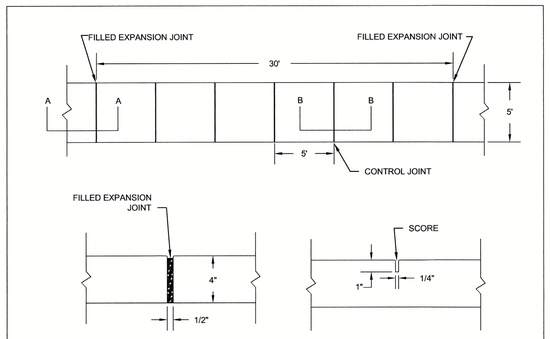
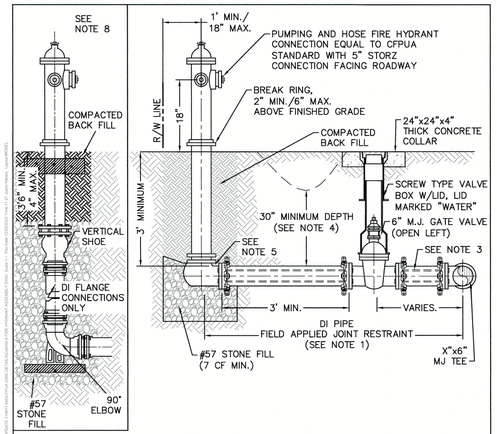


NOTES:

1. SANITARY SEWER CLEAN-OUTS, WATER METERS, MANHOLES, VALVE LIDS, ETC TO BE LOCATED OUTSIDE SIDEWALK WHERE FEASIBLE.
2. MINIMUM SIDEWALK WIDTH TO BE 6' IF PLACED AT BACK OF CURB.
3. CONCRETE FOR ALL SIDEWALKS (EXCEPT ANY PORTION CONTAIN WITHIN A DRIVEWAY APRON) SHALL BE CLASS "A" - 3,000 PSI.
4. MINIMUM REPLACEMENT FOR REPAIRS IS A 5' X 5' PANEL
5. JOINT MATERIAL TO COMPLY WITH CURRENT NCDOT STANDARDS.
6. 4" STONE BASE OR WIRE MESH MAY BE REQUIRED FOR POOR SOIL OR CONDITIONS
7. MINIMUM DEPTH FOR TUNNELING BELOW SIDEWALK IS 12"
8. MAX ADJACENT GROUND SLOPE WITHOUT RAILING IS 2:1
9. MIN GRADE FOR DRAINAGE IS 1% IN AT LEAST 1 DIRECTION. MAX CROSS SLOPE IS 2%. MAX LONGITUDINAL SLOPE IS 5.0%, OR MATCHING THE SLOPE OF THE EXISTING ADJACENT ROAD.
10. ALL SIDEWALKS MUST BE ADA COMPLIANT.

SD 3-10 CONCRETE SIDEWALK

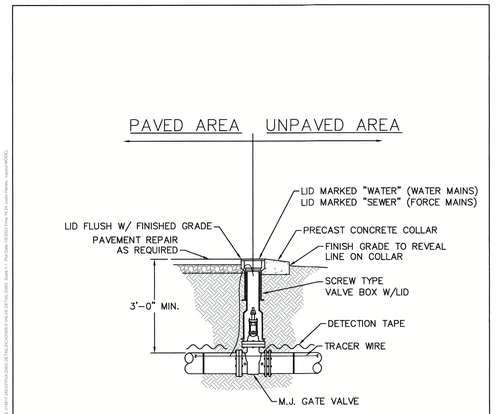
NOT TO SCALE



NOTES

1. JOINT RESTRAINT SYSTEMS SHALL BE WEDGE ACTION STYLE FOR DI.
2. WHEN HYDRANT LEGS REQUIRE FULL LENGTH PIPE SECTIONS, OVER BELL RESTRAINT SYSTEM SHALL HAVE 316 STAINLESS STEEL HARNESS AND FASTENERS.
3. CONTINUOUS 316 STAINLESS STEEL RODS (TEE TO VALVE AND VALVE TO HYDRANT) MAY BE USED WITH 316 STAINLESS STEEL MJ T-BOLT AND GASKET KITS, AS AN ALTERNATIVE.
4. HYDRANT AND VALVE SHALL BE PLACED OUTSIDE DITCH LIMITS.
5. WEEP HOLES OPEN AND UNBLOCKED TO DRAIN.
6. MJ TEE SHALL BE RESTRAINED ON EACH SIDE OF MAIN PLUS MAIN VALVES, FITTING, OR JOINTS WITHIN 10-FEET OF MJ TEE.
7. TRACING WIRE SHALL EXTEND ALONG HYDRANT LATERAL AND UP TO FINISHED GRADE WITH 2-FEET EXTENDED ABOVE THE BREAK RING OF HYDRANT.
8. HYDRANT TO UTILIZE A VERTICAL SHOE WHEN INSTALLED 5' IN DEPTH OR GREATER.

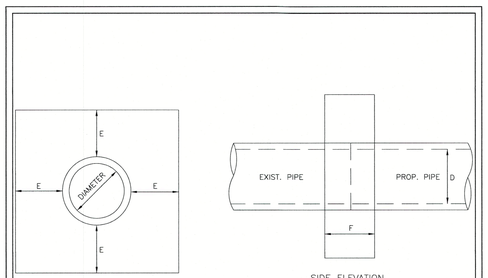
DETAIL: FIRE HYDRANT ASSEMBLY		CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: W-9
SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2023	Stewardship. Sustainability. Service.	SHEET NO: -



NOTES:

1. TRACER WIRE SHALL PENETRATE VALVE BOX THROUGH DRILLED HOLE APPROX. 6" BELOW GRADE WITH MINIMUM 2-FEET EXTRA LENGTH COILED IN THE VALVE BOX. SEE WS-6.

DETAIL: VALVE DETAIL		CAPE FEAR PUBLIC UTILITY AUTHORITY 235 GOVERNMENT CENTER DRIVE WILMINGTON, NC 28403 OFFICE: (910)332-6560	DETAIL NO: WS-5
SCALE: NOT TO SCALE	CFPUA DETAIL DATE: 01/01/2023	Stewardship. Sustainability. Service.	SHEET NO: -



GENERAL NOTES:

USE PIPE COLLAR FOR EXTENDING OR JOINING CONCRETE PIPE CULVERTS ONLY AS DIRECTED BY THE ENGINEER. THIS INCLUDES EXTENDING EXISTING PIPES OF DIFFERENT MATERIALS.

CONSTRUCT THE PIPE COLLAR USING FORMS AND CLASS "B" OR BETTER CONCRETE.

ENSURE INSIDE OF PIPE IS CLEAN. PROVIDE JOINT SEAL MATERIAL, AS NEEDED.

D	E	F	CU. YD.
12"	12"	12"	0.3528
18"	12"	12"	0.3990
24"	12"	12"	0.4465
30"	12"	12"	0.6560
36"	12"	12"	0.7640
42"	12"	12"	0.8856
48"	12"	12"	1.0126
54"	18"	18"	2.5793
60"	18"	18"	2.8506
66"	18"	18"	3.1307
72"	18"	18"	3.4176

STANDARD DETAIL

CONCRETE PIPE COLLAR

DATE: OCTOBER, 2012
DRAWN BY JSR
CHECKED BY B.D.R., P.E.
SCALE NOT TO SCALE

CITY OF WILMINGTON NORTH CAROLINA
CITY OF WILMINGTON ENGINEERING
P.O. BOX 1810
WILMINGTON, N.C. 28402
(910) 341-7807

SD 2-100

REV. NO.	REVISIONS	DATE

DATE: FEBRUARY, 2025

PROJECT NUMBER: 2TRSW2310

DWG PATH/FILE NAME:

PLANS PREPARED BY:

CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 13:49:08 EST

P.E.

March 27, 2025

DATE

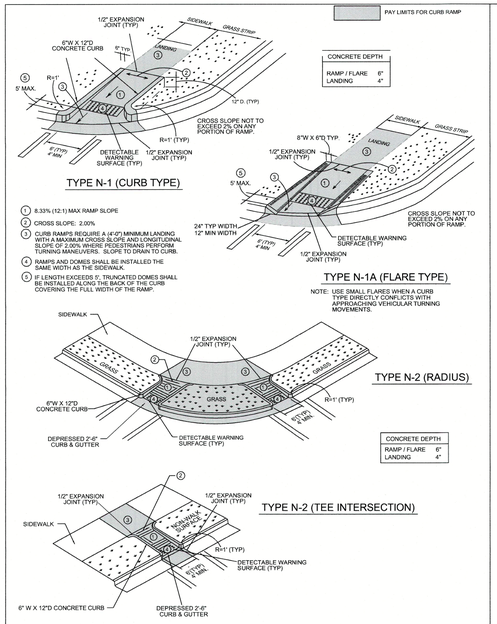
GREENVILLE LOOP ROAD SIDEWALK

NTS

TYPICAL SECTION AND CONSTRUCTION DETAILS

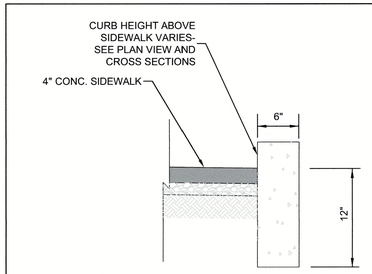
SHEET CD-1

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

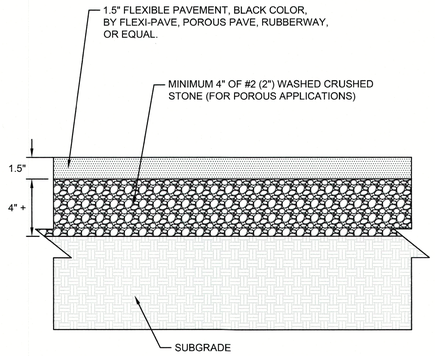


CURB RAMPS GENERAL NOTES

1. STANDARD CURB RAMPS HAVE BEEN DEVELOPED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) AND PUBLIC RIGHT OF WAY ACCESS GUIDELINES (PROWAG).
2. CURB RAMPS SHALL BE PROVIDED AT LOCATIONS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. SIDEWALK ACCESS RAMPS SHALL BE LOCATED AS INDICATED IN THE DETAIL, HOWEVER, THE LOCATION MAY BE ADJUSTED IN COORDINATION WITH THE CITY OF WILMINGTON WHERE EXISTING LIGHT POLES, FIRE HYDRANTS, DROP INLETS, ETC. AFFECT PLACEMENT.
3. DOUBLE WHEELCHAIR RAMPS ARE TO BE INSTALLED AT ALL PUBLIC STREET INTERSECTIONS WHERE SIDEWALK IS REQUIRED.
4. THE WALKING SURFACE SHALL BE SLIP RESISTANT. THE COLOR FOR THE DETECTABLE WARNING AREA SHALL CONTRAST WITH WALKING SURFACE. SEE PROJECT SPECS FOR COLOR REQUIREMENT.
5. NO SLOPE ON THE SIDEWALK ACCESS RAMP SHALL EXCEED 1"/FT (12:1) IN RELATIONSHIP TO THE GRADE OF THE STREET.
6. IN NO CASE SHALL THE WIDTH OF THE SIDEWALK ACCESS RAMP BE LESS THAN 48" ALL RAMPS SHALL BE INSTALLED THE SAME WIDTH AS THE SIDEWALK.
7. USE CLASS A (3000 PSI) CONCRETE WITH A SIDEWALK FINISH IN ORDER TO OBTAIN A ROUGH NONSKID SURFACE.
8. A 1/2" EXPANSION JOINT INSTALLED FULL DEPTH WILL BE REQUIRED WHERE THE CONCRETE SIDEWALK ACCESS RAMP JOINS THE CURB AND ALSO WHERE NEW CONCRETE ABUTS EXISTING CONCRETE.
9. CURB RAMPS SHOULD BE PLACED PARALLEL TO THE DIRECTION OF TRAVEL.



HEADER CURB

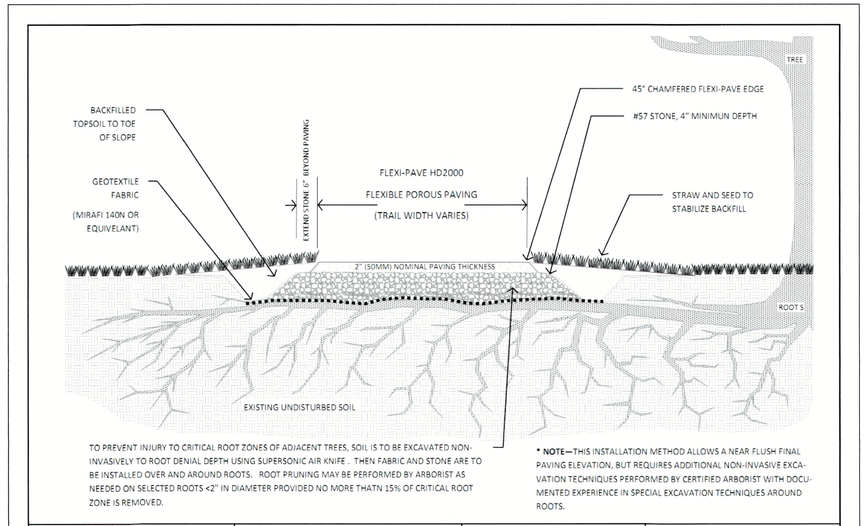


FLEXIBLE PAVEMENT DETAIL

SCALE: NOT TO SCALE

NOTE:

1. INSTALLATION PER MANUFACTURERS RECOMMENDATIONS



CAPITOL FLEXI-PAVE

NOTE: THIS DETAIL IS MEANT TO ILLUSTRATE THE INTERFACE OF FLEXI-PAVE WITH THE SURROUNDING INFRASTRUCTURE AND IS NOT MEANT TO BE SOLELY USED FOR CONSTRUCTION OF ANYTHING OTHER THAN FLEXI-PAVE . THEREFORE IT IS THE RESPONSIBILITY OF THE ENGINEER OF RECORD TO PROVIDE ALL INFORMATION, DETAILS AND SPECIFICATIONS REQUIRED TO SUIT LOCAL BUILDING CODES AND REGULATIONS FOR THE ITEMS OTHER THAN THE FLEXI-PAVE.

Capitol Flexi-Pave, LLC
18323 Woodburn Rd.
Leesburg, VA 20175
202.760.1099 PH
571.312.9208 FX
www.capitolflexipave.com

TITLE: FLEXI-PAVE TRAIL FLUSH WITH GRADE

DRAWN BY: NJA | REVISION DATE:
DATE: 7/2/15 | SCALE: NTS

DETAIL NO. 135.00.00

DUE TO VARIANCES IN LOCAL CODES, CONSTRUCTION PRACTICES AND REQUIREMENTS, ALL DETAILS SHALL BE CONSTRUCTED IN ACCORDANCE WITH SUCH LOCAL CODES, CONSTRUCTION PRACTICES AND REQUIREMENTS REGARDLESS OF DETAIL CONSTRUCTION SHOWN IN DRAWING. CAPITOL FLEXI-PAVE,LLC RESERVES THE RIGHT TO CHANGE SPECIFICATIONS SHOWN WITHOUT NOTICE. ALL CHANGES TO SPECIFICATIONS CAN ONLY BE APPROVED BY CAPITOL FLEXI-PAVE, LLC

© 2015 Capitol Flexi-Pave, LLC

FLEXIBLE PAVEMENT DETAIL

SCALE: NOT TO SCALE

REV. NO.	REVISIONS	DATE

DATE: JULY, 2024
PROJECT NUMBER: 2TRSW2310
DWG PATH/FILE NAME:

PLANS PREPARED BY:
CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:05:32 EST

P.E.
March 27, 2025
DATE

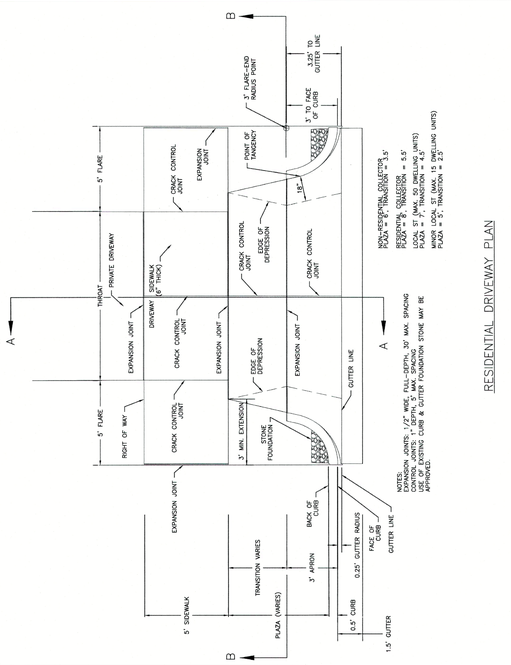
GREENVILLE LOOP ROAD SIDEWALK

NTS

TYPICAL SECTION AND CONSTRUCTION DETAILS

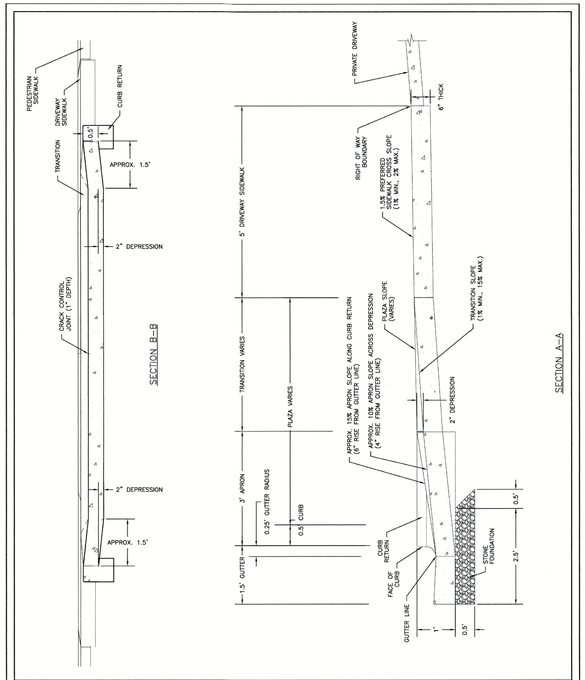
SHEET CD-2

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

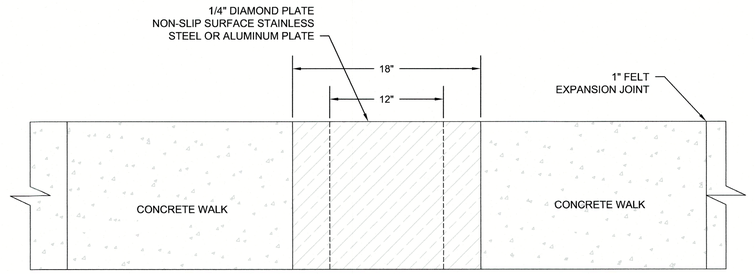


RESIDENTIAL DRIVEWAY PLAN

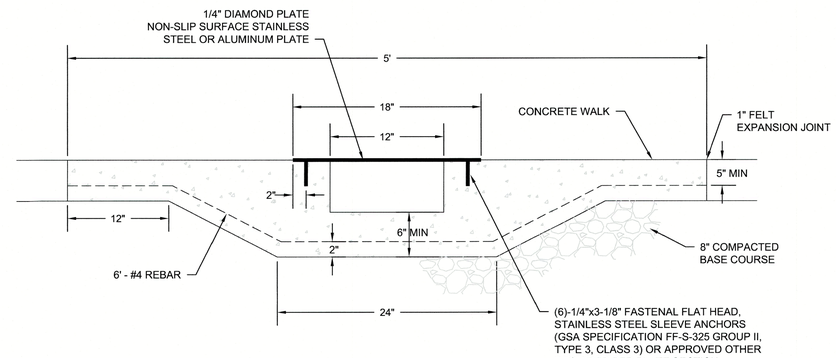
DATE: FEB. 14, 2017	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807
DRAWN BY JSR	RESIDENTIAL DRIVEWAY PLAN (VERTICAL CURB)	
CHECKED BY D.E.C., P.E.	1 of 2	
SCALE NOT TO SCALE		SD 3-03.1



DATE: FEB. 14, 2017	STANDARD DETAIL	CITY OF WILMINGTON NORTH CAROLINA CITY OF WILMINGTON ENGINEERING PO BOX 1810 WILMINGTON N.C. 28402 (910) 341-7807
DRAWN BY JSR	RESIDENTIAL DRIVEWAY SECTIONS (VERTICAL CURB)	
CHECKED BY D.E.C., P.E.	2 of 2	
SCALE NOT TO SCALE		SD 3-03.2



PLAN



SECTION

-FLUME MUST HAVE POSITIVE GRADE TOWARD OUTFALL

-DETAIL MAY BE USED TO CONVEY ROOF DRAINAGE THROUGH SIDEWALK/CURB INTO THE STREET

CONCRETE FLUME DETAIL

SCALE: NOT TO SCALE

REV. NO.	REVISIONS	DATE

DATE: JULY, 2024

PROJECT NUMBER: 2TRSW2310

DWG PATH/FILE NAME

PLANS PREPARED BY:

CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028597 DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:05:42 EST

P.E.

March 27, 2025

DATE

GREENVILLE LOOP ROAD SIDEWALK

NTS

TYPICAL SECTION AND CONSTRUCTION DETAILS

SHEET CD-3

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP.DWG

Curve Table: Alignments						
Curve #	PI	Delta	D	Length	Tangent	Radius
C1	10+08.79	61.9120	763.9437	8.10'	4.50'	7.50'
C2	10+19.35	64.1994	674.0680	9.52'	5.33'	8.50'
C3	14+43.31	46.9522	763.9437	6.15'	3.26'	7.50'

Curve Table: Alignments						
Curve #	PI	Delta	D	Length	Tangent	Radius
C4	14+54.21	47.8202	763.9437	6.26'	3.33'	7.50'
C5	15+05.88	37.2347	458.3662	8.12'	4.21'	12.50'
C6	15+19.71	36.7526	763.9437	4.81'	2.49'	7.50'

GREENVILLE LOOP ROAD
(60' PUBLIC ROW)

OLD MILITARY ROAD

TWIN MAGNOLIAS LANE

RETAIN POWER POLE
RELOCATE FIRE HYDRANT
AT&T TO RELOCATE
REMOVE AND RESET SIGN
RETAIN SIGN
RETAIN EXIST DITCH
INSTALL 14LF 6" PVC PIPE @ 1.00% UNDER SIDEWALK AREA. TIE TO EXIST. PIPE PRIOR TO WALL
RETAIN POWER POLE
RETAIN FORCEMAIN
RETAIN MANHOLE
4" CONCRETE SIDEWALK
RETAIN POWER POLE AND PEDESTAL
AVOID SHALLOW-DEPTH SPECTRUM SERVICE LINE
RETAIN SPEED LIMIT SIGN
EXTEND 18" RCP 4 LF @ 0.5%
RETAIN BRICK COLUMN
PIPE COLLAR
CONCRETE FLUME CROSSING STA 15+13
REMOVE 18" FES, EXTEND WITH 20LF 18" RCP @ 0.5% (FLOW TO OLD MILITARY RD)
TIE NEW FENCE TO EXIST CORNER POST @ 90° ANGLE
2" FLEXIBLE PAVEMENT STA. 15+20 TO 15+55
8" HEADER CURB STA. 15+50 TO STA. 16+10
RETAIN PEDESTAL
INSTALL NEW FENCE 1' BEHIND SIDEWALK
TIE PROPOSED FENCE TO EXIST FENCE
RETAIN EXIST FENCE
REMOVE TIMBER WALL
REMOVE AND RESET SIGN
RETAIN EXIST 10" OAKS
REMOVE EXISTING WOODEN FENCE AND REPLACE ACCORDING TO GRADE 5'₂ FROM BACK OF SIDEWALK-TIE TO EXIST CORNER POST. INSTALL NEW FENCE PRIOR TO DEMO OF EXIST FENCE SEE PROJECT SPECIFICATION FOR NEW FENCE CONSTRUCTION
EXIST WALL TO REMAIN
6' CMU WALL TO BE REMOVED
EXIST FENCE TO REMAIN
TRIM WAX MYRTLE AND HOLLY TREES 0.5' OFFSET FROM SIDEWALK
REMOVE MAGNOLIA TREES
REMOVE 8' WOODEN FENCE
REMOVE AND REPLACE 3 RAIL VINYL FENCE 1' OFFSET FROM SIDEWALK SEE PROJECT SPECIFICATIONS FOR NEW FENCE CONSTRUCTION
14 LF 18" DIP @ 1.07% INV (N)=19.80' INV (S)= 19.65'
TIE TO EXIST GRADE @ STA. 1+20
EXIST 10' NON-MUNICIPAL UTILITY EASEMENT
RETAIN EXIST 36" CMP
EXISTING 10' UTILITY EASEMENT
9' INGRESS/EGRESS EASEMENT
EXISTING 10' UTILITY EASEMENT — M.B. 43, PG. 334
ESTIMATED LOCATION OF UNDERGROUND POWER

① N/F
ROSE JUSTIN E STEPHNIE K
TAX MAP# R06200-005-037-000
DB 6143 PG 1078

② N/F
BARTH CONNOR
TAX MAP# R06200-005-046-000
DB 6537 PG 985
DB 6537 PG 985

③ N/F
GOULD DANIEL L LAURIE G
TAX MAP# R06200-005-038-000
DB 6503 PG 1993

④ N/F
CERMAK GEOFFREY D
DEBORAH S
TAX MAP# R06200-005-039-000
DB 5015 PG 2168

⑤ N/F
OLIVOLA MARK BARBARA JOAN
TAX MAP# R06200-005-010-001
DB 4785 PG 509

CONSTRUCTION NOTES

1. CURB RAMP (SEE DETAIL)
2. TIE TO EXIST FENCE
3. ADJUST WATER METER, WATER VALVE OR CLEANOUT

Profile View of PropSW

Elevation

OLD MILITARY ROAD

TIE TO EXISTING GRADE
PI=10+00
EL=21.08

PI=10+45.00
EL=23.24
VC=30
K=6

4.80%

14LF 18" DIP
@1.07%
INV (N)=19.80'
INV (S)=19.65'

-0.61%

PI=11+60.00
EL=22.54
VC=50
K=15

2.79%

PI=12+25.00
EL=24.35
VC=30
K=28

PROPOSED GRADE

EXISTING GRADE

1.74%

PI=13+25.00
EL=26.09
VC=50
K=20

-0.73%

PI=14+20.00
EL=25.40'

-0.99%

PI=14+57.00
EL=25.03'

TWIN MAGNOLIAS ROAD
STA 14+77

-0.33%

PI=14+89.00
EL=24.93'

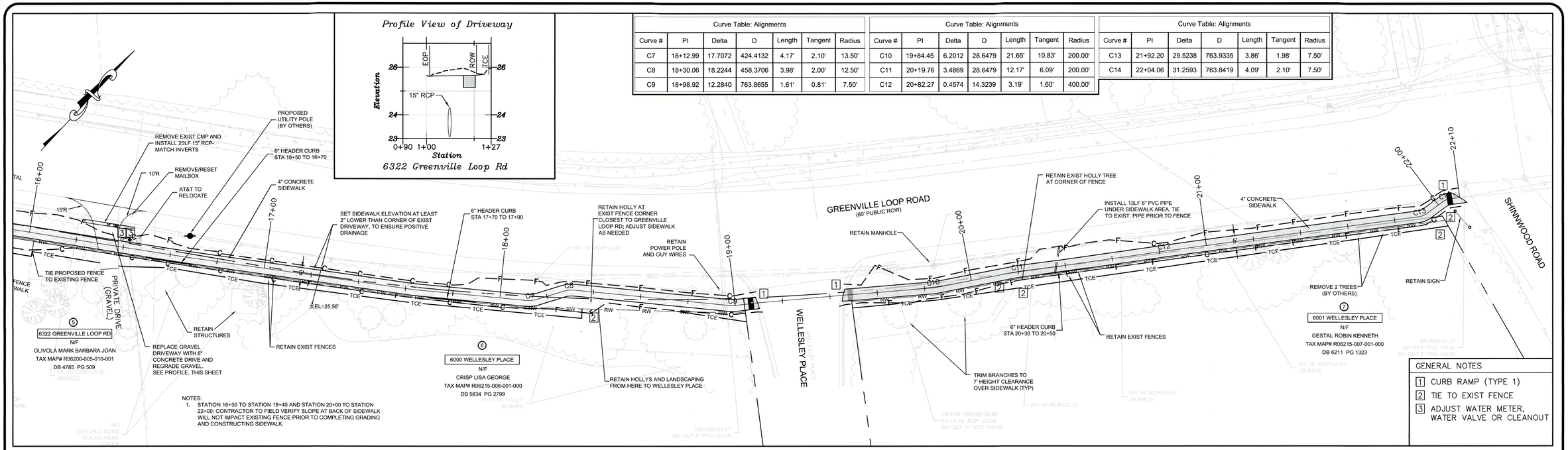
1.85%

PI=15+20.00
EL=25.50'

0.00%

PI=16+00.00
EL=25.50'

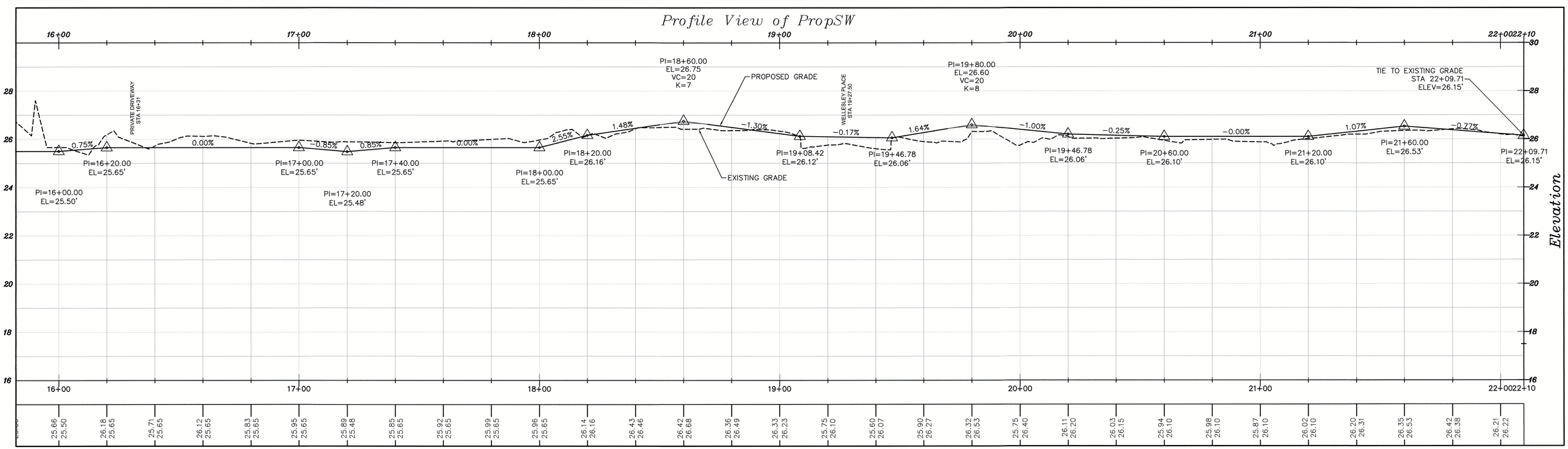
| | | | | | |



Curve Table: Alignments						
Curve #	PI	Delta	D	Length	Tangent	Radius
C7	18+12.99	17.7072	424.4132	4.17'	2.10'	13.50'
C8	18+30.06	18.2244	458.3706	3.98'	2.00'	12.50'
C9	18+98.92	12.2840	763.8655	1.61'	0.81'	7.50'

Curve Table: Alignments						
Curve #	PI	Delta	D	Length	Tangent	Radius
C10	19+84.45	6.2012	28.6479	21.65'	10.83'	200.00'
C11	20+19.76	3.4869	28.6479	12.17'	6.09'	200.00'
C12	20+82.27	0.4574	14.3239	3.19'	1.60'	400.00'

Curve Table: Alignments						
Curve #	PI	Delta	D	Length	Tangent	Radius
C13	21+92.20	29.5238	763.9335	3.86'	1.98'	7.50'
C14	22+04.06	31.2593	763.8419	4.09'	2.10'	7.50'



MARCH 3, 2025

N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

REV. NO.	REVISIONS	DATE

DATE: FEBRUARY, 2025
PROJECT NUMBER: 2TRSW2310
DWG PATH/FILE NAME:

PLANS PREPARED BY:
CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:08:00 EST
P.E.
March 27, 2025
DATE

GREENVILLE LOOP ROAD SIDEWALK

PLAN and PROFILE SHEET

SCALE: 1"=20'
SHEET C-2

GENERAL NOTES

1. Contractor to ensure that all roadways and curb lines adjacent to this project are free of dirt, debris and equipment during the project duration, unless directed by the City Engineer. Any damage to existing curb and gutter at construction entrances must be repaired at the contractor's expense.
2. Additional matting may be used on steep slopes as directed by the City.
3. Contractor to install all erosion control measures before any clearing and grubbing is performed.
4. After storm drain systems are set, contractor is to stabilize all disturbed areas and slope using erosion control matting, seeding and mulch to maintain a dense, vigorous vegetative cover.

LEGEND

- CUT/FILL LINE
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- INLET PROTECTION
- WATTLE

INSTALL EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR GREATER (TYP)

GREENVILLE LOOP ROAD
(60' PUBLIC ROW)

INSTALL EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR GREATER (TYP)

OLD MILITARY ROAD

TWIN MAGNOLIAS LANE

REMOVE MAGNOLIA TREES

3705 MERGANSER LN

3709 MERGANSER LN

3713 MERGANSER LN

6200 TWIN MAGNOLIAS LN

6322 GREENVILLE LOOP RD

REV. NO.	REVISIONS	DATE

DATE: FEBRUARY, 2025

PROJECT NUMBER: 2TRSW2310

DWG PATH/FILE NAME

PLANS PREPARED BY:

CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028597 DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:06:17 EST

P.E.

March 27, 2025

DATE

GREENVILLE LOOP ROAD SIDEWALK

EROSION CONTROL PLAN

SCALE: NTS

SHEET EC-1

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

GENERAL NOTES

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LEGEND

- CUT/FILL LINE
- TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- INLET PROTECTION
- WATTLE

INSTALL EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR GREATER (TYP)

INSTALL EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR GREATER (TYP)

GREENVILLE LOOP ROAD
(60' PUBLIC ROW)

SHINNWOOD ROAD

PRIVATE DRIVE (GRAVEL)

6322 GREENVILLE LOOP RD

6000 WELLESLEY PLACE

WELLESLEY PLACE

6001 WELLESLEY PLACE

INV 15" CMP=23.06' (BURIED)

ROW OF HOLLY BUSHES

NO OBSTRUCTIONS FOUND NEAR SHEDS

SM RIM=24.67' INV OUT 8" PVC =20.08'

INV 18" RCP=23.27'

INV 15" RCP=23.57' (BURIED)

INV 15" RCP=23.54' (BURIED)

INV 18" RCP=23.76'

CB 2'X2' GRATE=25.89' INV IN 18" RCP =23.69' INV OUT 18" RCP =23.63'

SM RIM=26.28' INV IN 8" PVC =18.46' INV OUT 8" PVC =18.50'

INV IN 12" RCP
INV IN 12" RCP
INV IN 12" RCP
INV OUT 12"

SHC 94.5 FT
MAIN DOWNWARD
CROSSOVERS

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

REV. NO.	REVISIONS	DATE

DATE: JUNE, 2024
PROJECT NUMBER: 2TRSW2310
DWG PATH/FILE NAME:

PLANS PREPARED BY:
CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028597 DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:08:38 EST
P.E.
March 27, 2025
DATE

GREENVILLE LOOP ROAD SIDEWALK

EROSION CONTROL PLAN

SCALE: NTS
SHEET EC-2

CONSTRUCTION SEQUENCE

CONSTRUCTION SPECIFICATIONS

1. Hold preconstruction conference at least one week prior to starting construction and invite NCDEMLR LQS contact number is (910) 796-7215. In addition, contact the DEMLR Wilmington Regional Office at least 48 hours prior to commencing the land-disturbing activity using the aforementioned contact number.

2. Flag the work limits for protection.

3. Prior to any land disturbing (including demolition) activities, install silt/tree protection fence, wattles, inlet protection, place fine layer of sand, screenings, or fines on pavement prior to deposition of any excavated materials, and all other erosion control devices. Maintain all driveways by temporary stone.

4. In accordance with the erosion control plans, grade roadway and sidewlks, install storm drain, and place reinforced silt fence as shown. Stabilize all disturbed areas at the end of each work day. Place additional erosion control matting and stabilize 2:1 slopes as indicated. Modify silt fence placement around driveways and outlets as necessary, place silt fence around all temporary crossings and culverts as needed.

5. Complete final grading for roadway and sidewalk.

6. Finish grading of slopes, topsoil critical areas and permanently vegetate, seed and mulch.

7. All graded areas and bare soils will be seeded, fertilized and mulched according to NCDOT specifications to maintain a vigorous, dense, vegetative cover within 7 to 14 days or sooner of completion of any phase of grading. Refer to the latest NPDES Rules dated August 2011 for more information on ground stabilization requirements. In summary, critical areas should be stabilized by the end of day. Perimeter dikes, swales, ditches, slopes steeper than 3:1, and high quality (HQW) zones should be stabilized within 7 days. All other areas and slopes shall be stabilized within 14 days. If work on the project ceases for more than the above mentioned length of time, all disturbed areas shall have temporary vegetative ground cover established and erosion control devices maintained.

8. All erosion and sediment control practices will be inspected weekly and after rainfall events. Needed repairs will be made immediately.

9. Estimated time before final stabilization is 3 months.

10. Site includes approximately 0.46 acres of permanent vegetation area.

11. AFTER SITE IS STABILIZED, construction entrances, and construction staging and material area stockpile areas, and all other erosion control devices shall be removed, restored as existing, and permanently vegetated as described in the maintenance and vegetative plan.
Contractor must receive permission by project inspector before any measures are removed.

MAINTENANCE

Follow the construction sequence throughout project development. Adequate erosion and sediment control measures must be installed, maintained and adjusted as needed during the demolition or clearing and grubbing phases as well as throughout the life of and until permanent vegetation on the project is established. When changes in construction activities are needed, amend the sequence schedule in advance to maintain management control.

Notification of Land Resources Sediment and Erosion Control Self-Inspection Program:

The Sedimentation Pollution Control Act was amended in 2006 to require that persons responsible for land-disturbing activities inspect a project after each phase of the project to make sure that the approved erosion and sedimentation control plan is being followed. Rules detailing the documentation of these inspections took effect October 1, 2010. To simplify documentation of Self-Inspection Reports and NPDES Self-Monitoring Reports, a combined form is now available. The new form was developed to satisfy the requirements of the Sedimentation Pollution Control Act and the NPDES Stormwater Permit for Construction Activities, NCG 010000. Beginning August 1, 2013, the Division of Energy, Mineral, and Land Resources is responsible for administering both the SPCA and the NPDES Stormwater Permit for Construction Activities, NCG 070000. The combined form should make it easier to comply with self-inspection requirements.

The Combined Self-Monitoring form is available as a PDF and Word document from the Land Quality web site, http://deq.nc.gov/about/divisions/energy-mineral-land-sources/erosion-sediment-control/forms

If you have questions, please contact the Land Quality Section at a DENR Wilmington Regional Office at 910-796-7215.

If the same person conducts the land-disturbing activity & any related borrow or waste activity, the related borrow or waste activity shall constitute part of the land-disturbing activity unless the borrow or waste activity is regulated under the Mining Act of 1971, or is a landfill regulated by the Division of Waste Management. If the land-disturbing activity and any related borrow or waste activity are not conducted by the same person, they shall be considered separate land-disturbing activities and must be permitted either through the Sedimentation Pollution Control Act as a one-use borrow site or through the Mining Act.

MAINTENANCE PLAN

1. The Contractor shall check all erosion and sediment control practices for stability and operation following every runoff producing rainfall but in no case less than once every week. Any needed repairs will be made immediately by the Contractor to maintain all practices as designed. Also per National Pollutant Discharge Elimination System (NPDES) general stormwater permit, a rain gauge must be installed on site. The rain gauge must be kept onsite and inspections by the Contractor must be made and logged after every half inch of rainfall and once a week. The Contractor shall maintain a copy of the approved E&SC plan with approval letter, copies of any 401/404 documents from DWR/USACOE, a copy of the NPDES permit with minimum of most recent 30 days if self-inspection records will be kept on project is completed.

2. The Contractor shall remove sediment from erosion control devices when storage capacity has been approximately 50% filled. Gravel will be cleaned or replaced when the sediment pools no longer drains properly.

3. The Contractor shall remove sediment from behind silt fence when it becomes 0.5 feet deep at the fence. Silt fence will be repaired as necessary to maintain a barrier.

4. The Contractor shall fertilize, reseed as necessary, and mulch all seeded areas according to specifications in the vegetative plan to maintain a vigorous, dense vegetative cover.

5. The Contractor shall provide ground cover on exposed slopes or other areas within 7 to 14 days or sooner of completion of any phase of grading. Refer to the latest NPDES Rules dated August 2011 for more information on ground stabilization requirements. Permanent ground cover is to be provided for all disturbed areas within 7 to 14 days or sooner following completion of construction or development.

6. The Contractor shall use a silt bag for dewatering of trenching excavations and sediment containment devices for maintenance or removal purposes.

7. The City of Wilmington contact is Jason Pace. Phone (910) 945-8065.

VEGETATIVE PLAN (NCDENR 6.11)

SEEDING SCHEDULE

Shoulders, Side Ditches, Slopes (3:1)

Date	Type	Planting Rate
Aug. 15-Nov. 1	Tall Fescue	250 lbs./acre
Nov. 1-Mar. 1	Tall Fescue & Abruzzi Rye	250 lbs./acre 25 lbs./acre
Mar. 1-Apr. 15	Tall Fescue	250 lbs./acre
Apr. 15-Jun. 15	Hulled Common Bermudagrass	12 lbs./acre
Jun. 15-Aug. 15	Tall Fescue & Browntop Millet *** or Sorghum-Sudan Hybrids ***	250 lbs./acre 35 lbs./acre 30 lbs./acre
	Slopes (3:1 to 2:1)	
Mar. 1-Jun. 1	Switchgrass (Panicum virgatum)	
Mar. 1-Jun. 1	Splitbeard Bluestem (Andropogon ternarius)	
Mar. 1-Jun. 1	Partridge Pea (Chamaecrista fasciculata)	50 lbs./acre
(Mar. 1-Apr. 15)	Add Tall Fescue	250 lbs./acre
(Mar. 1-Jun. 30)	or Add Hulled Common Bermudagrass	8 lbs./acre
Jun. 1-Sep. 1	Tall Fescue *** & Browntop Millet *** or Sorghum-Sudan Hybrids ***	250 lbs./acre 35 lbs./acre 30 lbs./acre
Sep. 1-Mar. 1	Sericea Lespedeza (unhulled-unscarified) & Tall Fescue	70 lbs./acre 250 lbs./acre
(Nov. 1-Mar. 1)	Add Abruzzi Rye	25 lbs./acre

Consult Conservation Engineer or Soil Conservation Service for additional information concerning other alternatives for vegetation of denuded areas. The above vegetation rates are those which do well under local conditions: other seeding rate combinations are possible.

*** Temporary - Reseed according to optimum season for desired permanent vegetation. Do not allow temporary cover to grow over 12 inches in height before mowing, otherwise, fescue may be shaded out.

SEEDING SPECIFICATIONS

1) After rough grading is completed, till soil in areas to be seeded and planted to a depth of six inches.

2) Apply agricultural lime, fertilizer, and superphosphate to disturbed areas to be vegetated.
135 lbs. limestone/1000 sq. ft. (3 tons/acre) or based on soils test
35 lbs. 10-10-10 fertilizer/1000 sq. ft. (1500 lbs/acre)
40 lbs. 50% superphosphate/1000 sq. ft. (1750 lbs/acre)

3) Disk nutrients into soil to a depth of six inches until surface is uniform and free of large dirt clods.

4) Seeding permanent grass.
3.0 lbs. KY-31 tall fescue/1000 sq. ft. (130 lbs./acre) during February 15 through May 15 or August 15 through November 15.
-OR-
3.0 lbs. KY-31 tall fescue and 2.0 lbs. annual ryegrass/1000 sq. ft. during November 15 through February 15.

5) Mulch seeded area with small grain straw at 90 lbs/1000 sq. ft. (2 tons/acre). Spread uniformly. Approximately of ground surface should be visible to avoid blocking sunlight to seedlings. On areas where the ground surface equals or exceeds a 3:1 slope, and in the inverts of all drainage swales, tack mulch with asphalt emulsion at a rate of 450 gallons emulsion per acre of straw.

6) Mulch around shubbery and trees with pine straw to depth of 3 inches.

7) Temporary cover
1.0 lbs. brown top millet/1000 sq. ft. May through August 25.
-OR-
1.0 lbs. annual ryegrass/1000 sq. ft. August 25 through April.

Maintenance Requirements: Refertilize if growth is not fully adequate. Reseed, refertilize, and mulch immediately following erosion or other damage.

TOPSOILING (6.04)

CONSTRUCTION SPECIFICATIONS

MATERIALS

Determine whether the quality and quantity of available topsoil justifies selective handling. Quality topsoil has the following characteristics:

Texture - loam, sandy loam, and silt loam are best; sandy clay loam, silty clay loam, clay loam, and loamy sand are fair. Do not use heavy clay and organic soils such as peat or muck as topsoil.

Organic matter content - (sometimes referred to as "humic matter") should be greater than 1.5% by weight.

Acidity - pH should be greater than 3.6 before liming, and liming is required if it is less than 6.0.

Soluble salts - should be less than 500 ppm.

Sodium - sodium adsorption ratio should be less than 12.

The depth of material meeting the above qualifications should be at least 2 inches. Soil factors such as rock fragments, slope, depth to water table, and layer thickness affect the ease of excavation and spreading of topsoil.

Generally, the upper part of the soil, which is richest in organic matter, is most desirable; however, material excavated from deeper layers may be worth storing if it meets the other criteria listed above.

Organic soils such as mucks and peats do not make good topsoil. They can be identified by their extremely light weight when dry.

STRIPPING

Strip topsoil only from those areas that will be disturbed by excavation, filling, roadbuilding, or compaction by equipment. A 4 to 6-inch stripping depth is common, but depth varies depending on the site. Determine depth of stripping by taking soil cores at several locations within each area to be stripped. Topsoil depth generally varies along a gradient from hilltop to toe of the slope. Put sediment basins, diversions, and other controls into place before stripping.

STOCKPILING

Select stockpile location to avoid slopes and natural drainageways, avoiding traffic routes. On large sites, respreading is easier and more economical when topsoil is stockpiled in small piles located near areas where they will be used. All stockpile areas used shall be stabilized with silt fence and seeded per the latest NPDES rules.

Sediment barriers - Use sediment fences or other barriers where necessary to retain sediment.

Temporary seeding - Protect topsoil stockpiles by temporarily seeding per the latest NPDES rules.

Permanent vegetation - If stockpiles will not be used within 12 months they must be stabilized with permanent vegetation to control erosion and weed growth.

SITE PREPARATION

Before spreading topsoil, establish erosion and sedimentation control practices such as diversions, berms, dikes, waterways, and sediment basins.

Grading - Maintain grades on the areas to be topsoiled according to the approved plan and do not alter them by adding topsoil.

Liming of subsoil - Where the pH of the existing subsoil is 6.0 or less, or the soil is composed of heavy clays, incorporate agricultural limestone in amounts recommended by soil tests or specified for the seeding mixture to be used. Incorporate lime to a depth of at least 2 inches by disking.

Roughening - Immediately prior to spreading the topsoil. loosen the subgrade by disking or scarifying to a depth of at least 4 inches, to ensure bonding of the topsoil and subsoil. If no amendments have been incorporated, loosen the soil to a depth of at least 6 inches before spreading topsoil.

SPREADING TOPSOIL

Do not spread topsoil while it is frozen or muddy or when subgrade is wet or frozen. Correct any irregularities in the surface that result from topsoiling or other operations to prevent the formation of depressions or water pockets.

Compact the topsoil enough to ensure good contact with the underlying soil, but avoid excessive compaction, as it increases runoff and inhibits seed germination. Light packing with a roller is recommended where high-maintenance turf is to be established.

On slopes and areas that will not be mowed, the surface may be left rough after spreading topsoil. A disk may be used to promote bonding at the interface between topsoil and subsoil.

After topsoil application, follow procedure for seedbed preparation, taking care to avoid excessive mixing of topsoil into the subsoil.

LAND GRADING (6.02)

CONSTRUCTION SPECIFICATIONS

1. Construct and maintain all erosion and sedimentation control practices and measures in accordance with the approved sedimentation control plan and construction schedule.

2. Remove good topsoil from areas to be graded and filled, and preserve it for use in finishing the grading of all critical areas.

3. Scarify areas to be topsoiled to a minimum depth of 2 inches before placing topsoil.

4. Clear and grub areas to be filled to remove trees, vegetation, roots, or other objectionable material that would affect the planned stability of the fill.

5. Ensure that fill material is free of brush, rubbish, rocks, logs, stumps, building debris, and other materials inappropriate for constructing stable fills.

6. Place all fill in layers not to exceed 9 inches in thickness, and compact the layers as required to reduce erosion, slippage, settlement, or other related problems.

7. Do not incorporate frozen material or soft or highly compressible materials into fill slopes.

8. Do not place fill on a frozen foundation, due to possible subsidence and slippage.

9. Keep diversions and other water conveyance measures free of sediment during all phases of development.

10. Handle seeps or springs encountered during construction in accordance with approved methods.

11. Permanently stabilize all graded areas immediately after final grading is completed on each area in the grading plan per NPDES Soil Stabilization Timeframes.

12. Show topsoil stockpiles, borrow areas, and spoil areas on the plans, and make sure they are adequately protected from erosion. Include final stabilization of these areas in the plan.

MAINTENANCE

Periodically check all graded areas and the supporting erosion and sedimentation control practices, especially after heavy rainfalls. Promptly remove all sediment from diversion and other water-disposal practices. If washouts or breaks occur, repair them immediately. Prompt maintenance of small eroded areas before they become significant gullies is an essential part of an effective erosion and sedimentation control plan.

Note: Limit disturbances to the length that can be stabilized at the end of the work day.

N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

FEBRUARY 26, 2025

REV. NO.	REVISIONS	DATE

DATE: JUNE, 2024
PROJECT NUMBER: 2TRSW2310
DWG PATH/FILE NAME:

PLANS PREPARED BY:
CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

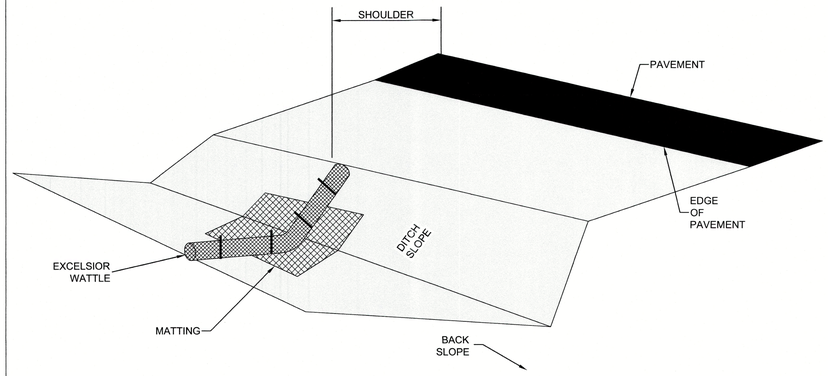
NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:08:45 EST
P.E.
March 27, 2025
DATE

GREENVILLE LOOP ROAD SIDEWALK

EROSION CONTROL NOTES

SCALE: NTS
SHEET EC-3



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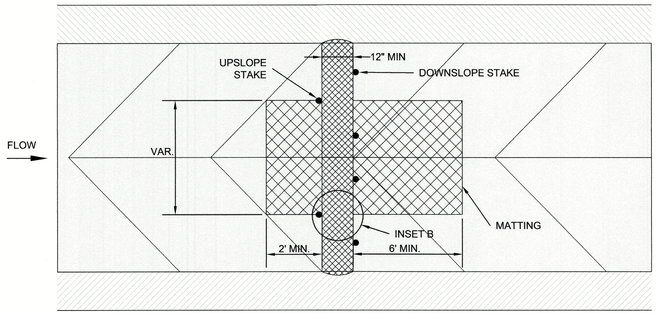
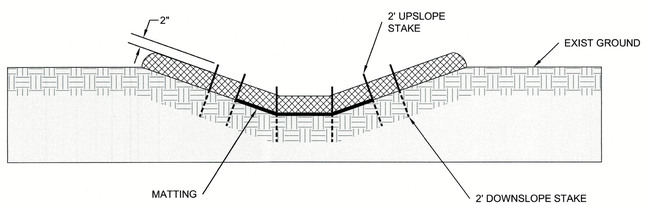
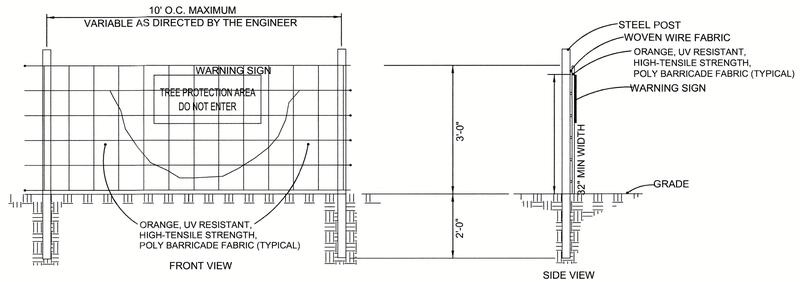


PLAN VIEW



CROSS SECTION-TRAPEZOIDAL DITCH

WATTLE DETAIL

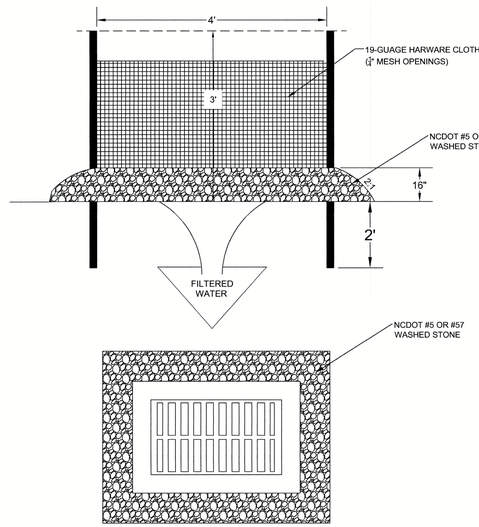


WARNING SIGN DETAIL

NOTES

WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
ADDITIONAL SIGNS MAY BE REQUIRED BY CITY OR NCDENR, BASED ON ACTUAL FIELD CONDITIONS.
SIGNS SHALL BE INCIDENTAL TO THE FENCE.

TREE PROTECTION DETAIL



NOTES:
1. UNIFORMLY GRADE A SHALLOW DEPRESSION APPROACHING INLET
2. DRIVE 5-FOOT STEEL POSTS (1.25 LB/LF) 2 FEET INTO GROUND SURROUNDING THE INLET. SPACE POSTS EVENLY AROUND THE PERIMETER OF THE INLET, A MAXIMUM OF 4 FEET APART.
3. SURROUND THE POSTS WITH WIRE MESH HARDWARE CLOTH. SECURE THE WIRE MESH TO THE STEEL POSTS AT THE TOP, MIDDLE AND BOTTOM. PLACING A 2-FOOT FLAP OF THE WIRE MESH UNDER THE GRAVEL FOR ANCHORING IS RECOMMENDED.
4. PLACE CLEAN GRAVEL (NCDOT #5 OR #57 STONE) ON A 2:1 SLOPE WITH A HEIGHT OF 16 INCHES AROUND THE WIRE, AND SMOOTH TO AN EVEN GRADE.
5. ONCE THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED, REMOVE ACCUMULATED SEDIMENT, AND ESTABLISH FINAL GRADING ELEVATIONS.
6. COMPACT THE ARE PROPERLY AND STABILIZE IT WITH GROUNDCOVER.

HARDWARE CLOTH AND GRAVEL INLET PROTECTION

REV. NO.	REVISIONS	DATE

DATE: JUNE, 2024
PROJECT NUMBER: 2TRSW2310
DWG PATH/FILE NAME:

PLANS PREPARED BY:
CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

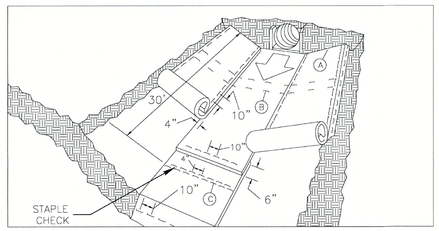
E-SIGNED by Denise Freund on 2025-03-27 14:08:53 EST
P.E.
March 27, 2025
DATE

GREENVILLE LOOP ROAD SIDEWALK

EROSION CONTROL DETAILS

SCALE: NTS
SHEET EC-4

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG



MATTING IN DITCHES

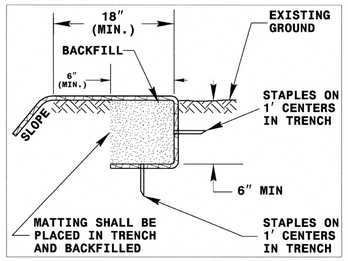
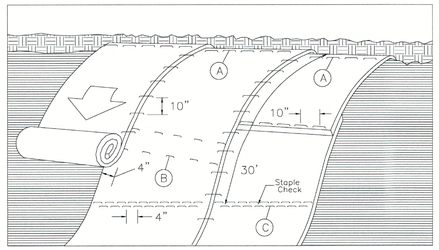
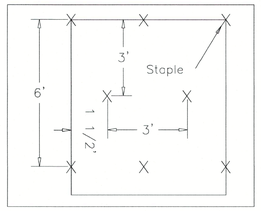


DIAGRAM (A)



MATTING ON SLOPES



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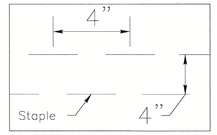


DIAGRAM (C)

NOTES

THIS DETAIL APPLIES TO STRAW, EXCELSIOR, COIR FIBER MAT AND PERMANENT SOIL REINFORCEMENT MAT (PSRM) INSTALLATION AND AS DIRECTED.

STAPLES SHALL BE NO. 11 GAUGE STEEL WIRE FORMED INTO A "U" SHAPE WITH A MINIMUM THROAT WIDTH OF 1 INCH AND NOT LESS THAN 6 INCHES IN LENGTH.

NOT TO SCALE

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-18

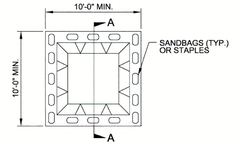
ROADWAY STANDARD DRAWING FOR
MATTING INSTALLATION

SHEET 1 OF 1
1631.01

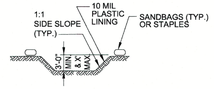
TEMPORARY LINERS

MAINTENANCE:
1. INSPECT ROLLED EROSION CONTROL PRODUCTS (RECP) AT LEAST WEEKLY AND AFTER EACH SIGNIFCANT (1/2 INCH OR GREATER) RAIN FALL EVENT REPAIR IMMEDIATELY.
2. GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED, AND EROSION MUST NOT OCCUR BENEATH THE RECP.
3. ANY AREAS OF THE RECP THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
4. IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
5. MONITOR AND REPAIR THE RECP AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.

ONSITE CONCRETE WASHOUT STRUCTURE WITH LINER



PLAN



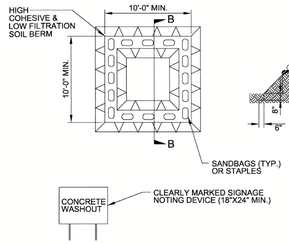
SECTION A-A

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

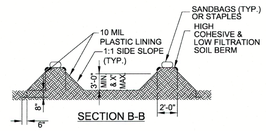
2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

BELOW GRADE WASHOUT STRUCTURE
NOT TO SCALE



PLAN



SECTION B-B

NOTES:
1. ACTUAL LOCATION DETERMINED IN FIELD

2. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.

3.CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARY MARKED WITH SIGNAGE NOTING DEVICE.

ABOVE GRADE WASHOUT STRUCTURE
NOT TO SCALE

NPDES GENERAL STORMWATER PERMIT
SOIL STABILIZATION TIMEFRAMES

SITE DESCRIPTION	STABILIZATION TIME	TIMEFRAME EXCEPTIONS
PERIMETER DIKES, SWALES, DITCHES AND SLOPES	7 DAYS	NONE
HIGH QUALITY WATER (HQW) ZONES	7 DAYS	NONE
SLOPES STEEPER THAN 3:1	7 DAYS	NONE
SLOPES 3:1 OR FLATTER	14 DAYS	7 DAYS FOR SLOPES GREATER THAN 50' IN LENGTH
ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14 DAYS	NONE, EXCEPT FOR PERIMETERS AND HQW ZONES.

PROJECT REFERENCE NO.	SHEET NO.
X-XXXX	EC-XX/CONST.XX
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

REV. NO.	REVISIONS	DATE

DATE: JUNE, 2024
PROJECT NUMBER: 2TRSW2310
DWG PATH/FILE NAME

PLANS PREPARED BY:
CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr. • Wilmington, NC 28412 • (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

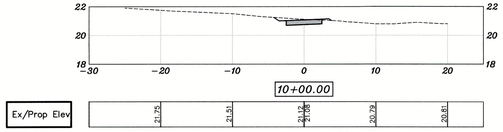
E-SIGNED by Denise Freund on 2025-03-27 14:09:02 EST
P.E.
March 27, 2025
DATE

GREENVILLE LOOP ROAD SIDEWALK

EROSION CONTROL DETAILS

SCALE: NTS
SHEET EC-5

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG



	10+00.00	10+60.00	11+40.00	12+20.00
Ex/Prop Elev	21.75 / 21.81 / 21.08 / 20.79 / 20.81	21.86 / 20.88 / 22.68 / 23.15 / 23.81 / 23.26	22.81 / 21.10 / 22.36 / 22.97 / 21.89 / 21.34	23.68 / 21.81 / 21.98 / 24.42 / 24.30 / 24.43 / 24.23
	10+16.80	**10+80.00**	**11+60.00**	**12+40.00**
Ex/Prop Elev	21.72 / 19.85 / 20.68 / 19.93 / 24.05 / 20.47 / 20.89	22.13 / 21.02 / 23.84 / 24.03 / 23.11 / 22.85	22.83 / 21.22 / 22.18 / 22.75 / 21.77 / 21.90	23.91 / 22.31 / 23.50 / 24.60 / 24.92 / 24.66 / 24.86
	10+20.00	**11+00.00**	**11+80.00**	**12+60.00**
Ex/Prop Elev	21.49 / 19.88 / 20.52 / 20.64 / 20.09 / 20.09	22.40 / 20.83 / 22.45 / 22.93 / 22.81 / 21.86	23.16 / 21.30 / 23.15 / 23.11 / 22.50 / 22.44	24.14 / 22.86 / 25.00 / 24.98 / 25.61 / 25.59
	10+40.00	**11+20.00**	**12+00.00**	**12+80.00**
Ex/Prop Elev	21.63 / 20.50 / 22.38 / 22.91 / 22.49 / 22.47	22.66 / 20.91 / 22.45 / 22.76 / 22.18 / 21.09	23.43 / 21.49 / 23.49 / 23.68 / 23.48 / 23.30	24.44 / 23.25 / 25.73 / 25.91 / 26.16 / 26.24

-PROPSW-

HOR: 1"=10'

VER: 1"=5'

REV. NO.	REVISIONS	DATE

DATE: JUNE, 2024

PROJECT NUMBER: 2TRSW2310

DWG PATH/FILE NAME: N:\PROJECT FILES\Trans Bond-Ped-Bike-Fairtown Sidewalk-2015\Phase 2-2020\Design\Drawings\TransBond-McClelland Drainage DESIGN_2020.dwg

PLANS PREPARED BY:

CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr. • Wilmington, NC 28412 • (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028597 DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:09:09 EST

P.E.

March 27, 2025

DATE

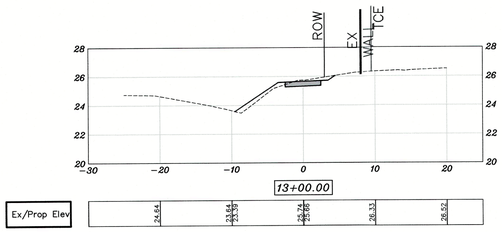
GREENVILLE LOOP ROAD SIDEWALK

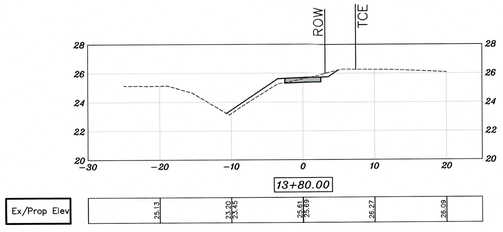
CROSS SECTIONS

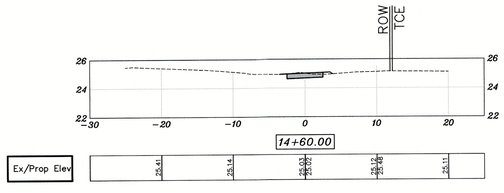
SCALE: 1"=10' HOR. 1"=5' VER.

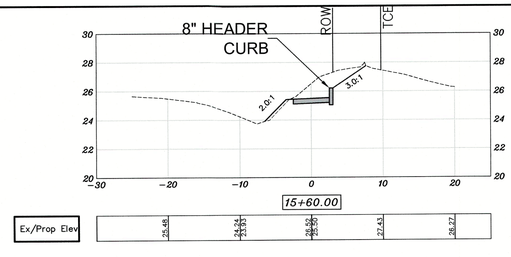
SHEET X-1

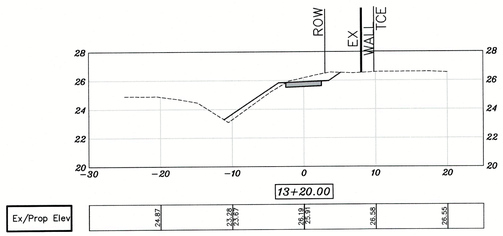
FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

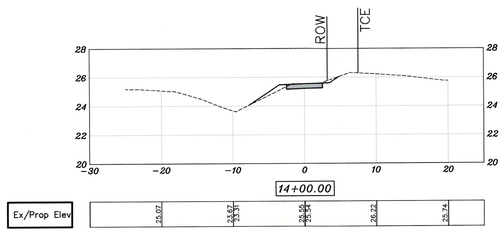


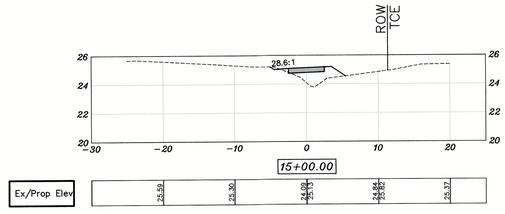


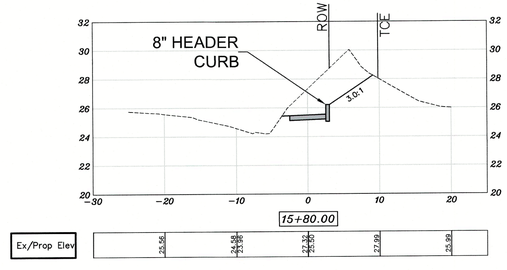


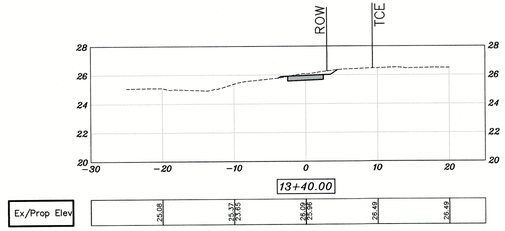


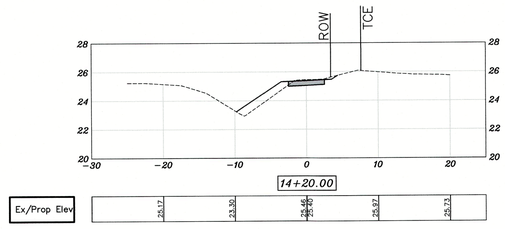


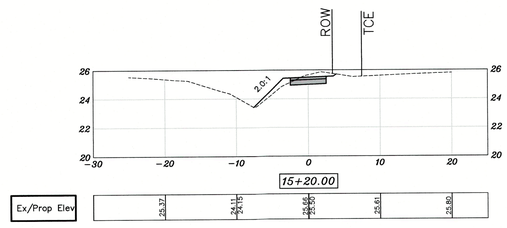


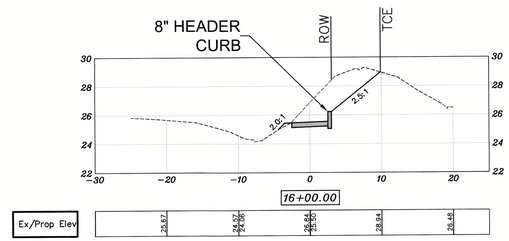


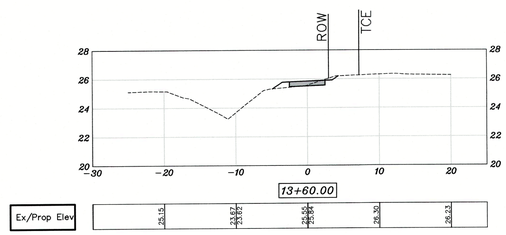


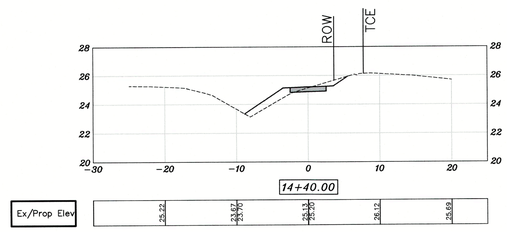


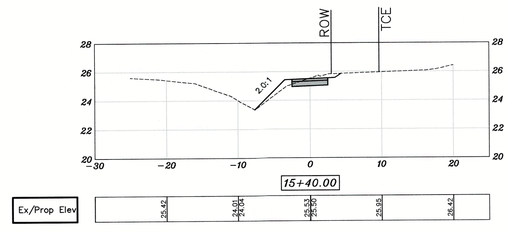


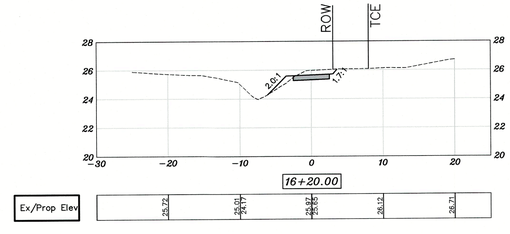












-PROPSW-

HOR: 1"=10'

VER: 1"=5'

REV. NO.	REVISIONS	DATE

DATE: FEBRUARY, 2025

PROJECT NUMBER: 2TRSW2310

DWG PATH/FILE NAME: N:\PROJECT FILES\Trans Bond-Ped-Bike-Fairlawn Sidewalk-2015_Phase 2-2020\Design\Drawings\TransBond-McClelland Drainage DESIGN_2020.dwg

PLANS PREPARED BY:

CITY OF WILMINGTON NORTH CAROLINA

Engineering

212 Operations Center Dr.• Wilmington, NC 28412• (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:09:18 EST

P.E.

March 27, 2025

DATE

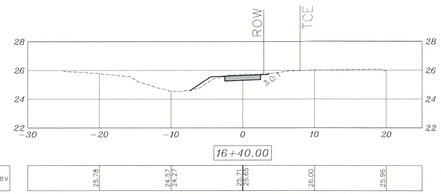
GREENVILLE LOOP ROAD SIDEWALK

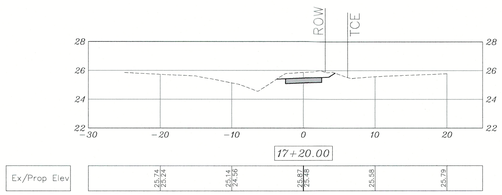
CROSS SECTIONS

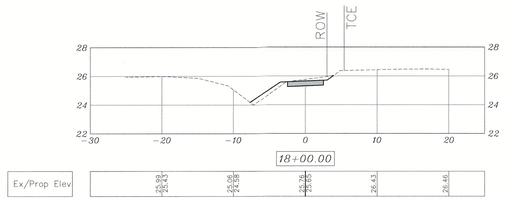
SCALE: 1"=10' HOR. 1"=5' VER.

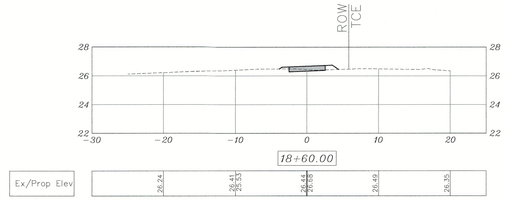
SHEET X-2

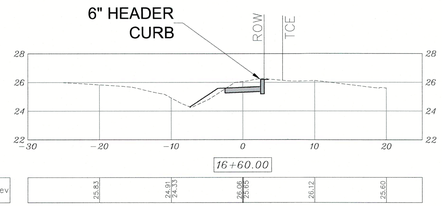
FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP SW-SHINWOOD TO OMRD-REWORK.DWG

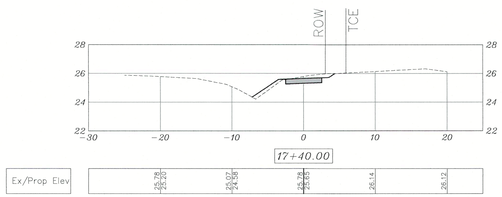


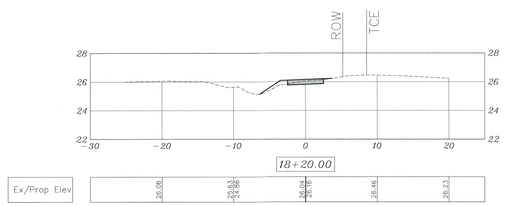


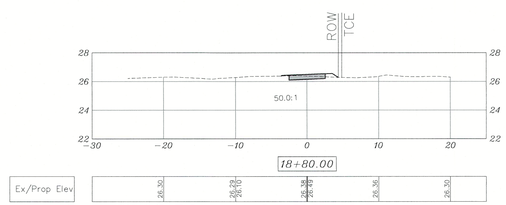


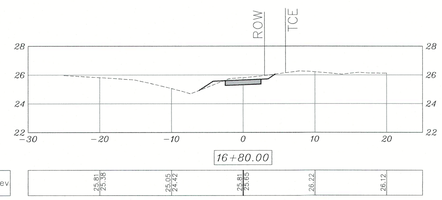


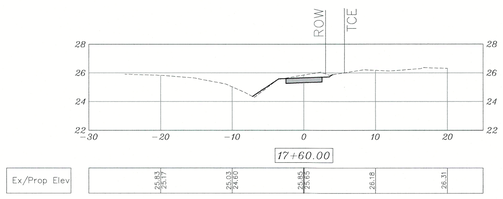


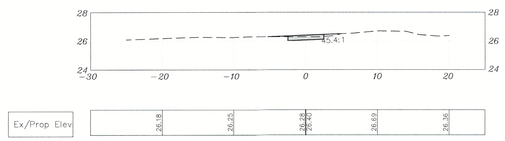


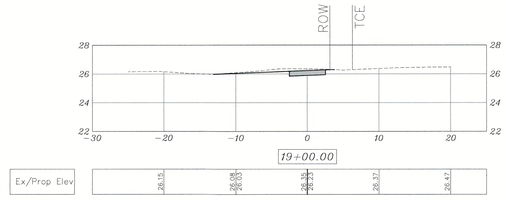


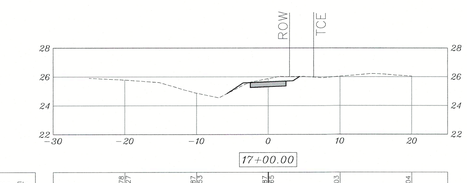


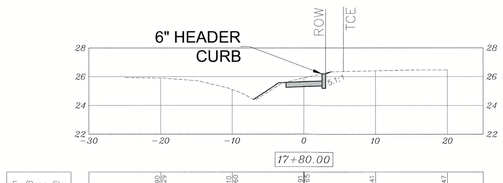


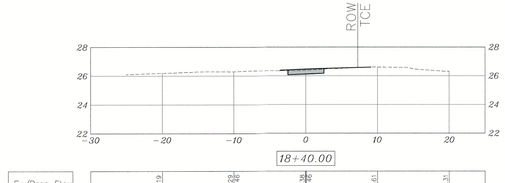


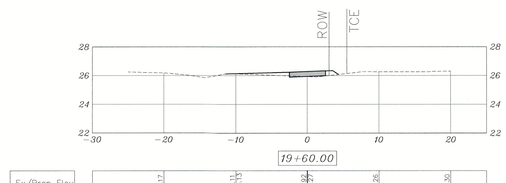












-PROPSW-

HOR: 1"=10'

VER: 1"=5'

REV. NO.	REVISIONS	DATE

DATE: FEBRUARY, 2025

PROJECT NUMBER: 2TRSW2310

DWG PATH/FILE NAME: N:\PROJECT FILES\Trans Bond-Ped-Bike-Fairtown Sidewalk-2015\Phase 2-2020\Design\Drawings\Trans@bond-McClelland Drainage DESIGN_2020.dwg

PLANS PREPARED BY:

CITY OF WILMINGTON NORTH CAROLINA
Engineering
212 Operations Center Dr. • Wilmington, NC 28412 • (910) 341 - 7807

NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

E-SIGNED by Denise Freund on 2025-03-27 14:09:25 EST

P.E.

March 27, 2025

DATE

GREENVILLE LOOP ROAD SIDEWALK

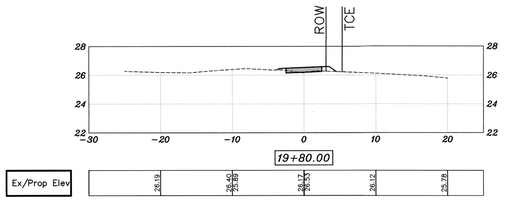
CROSS SECTIONS

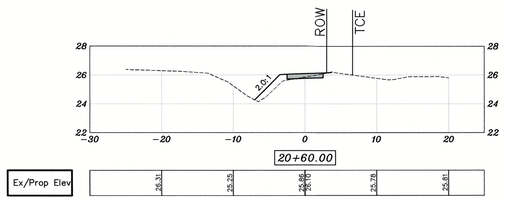
SCALE: 1"=10' HOR. 1"=5' VER.

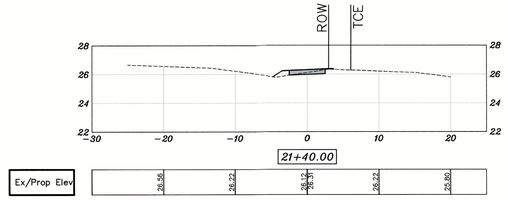
SHEET X-3

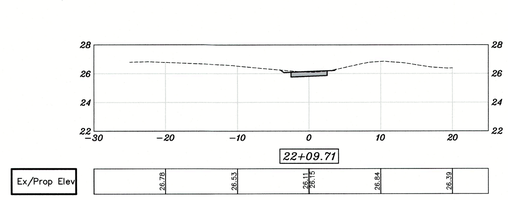
MARCH 13, 2025

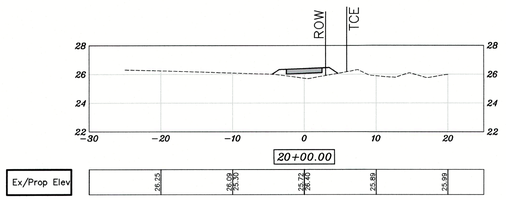
N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OHRD\DESIGN\DRAWINGS\GREENVILLE LOOP

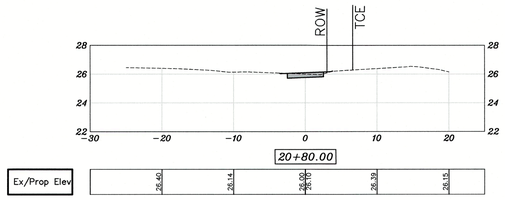


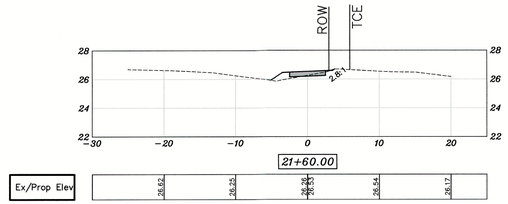


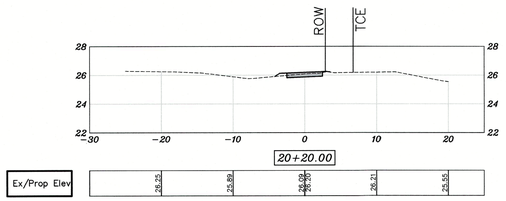


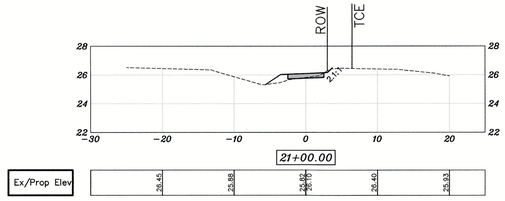


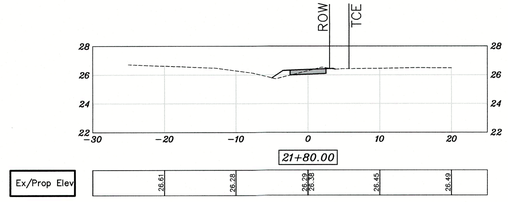


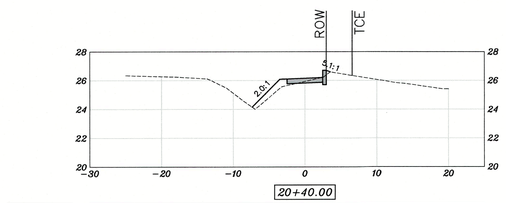


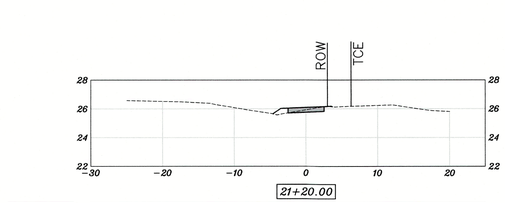


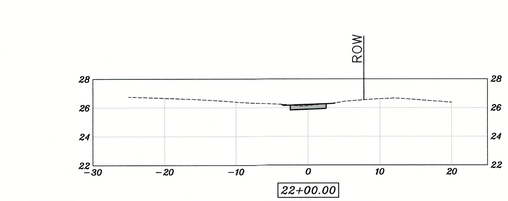












-PROPSW-

HOR: 1"=10'

VER: 1"=5'

REV. NO.	REVISIONS	DATE

DATE: JUNE, 2024

PROJECT NUMBER: 2TRSW2310

DWG PATH/FILE NAME: N:\PROJECT FILES\Trans Bond-Ped-Bike-Fairtown Sidewalk-2015\Phase 2-2020\Design\Drawings\TransBond-McClelland Drainage DESIGN_2020.dwg

PLANS PREPARED BY:

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NORTH CAROLINA PROFESSIONAL SEAL 028597 ENGINEER DENISE L. FREUND

E-SIGNED by Denise Freund on 2026-03-27 14:09:35 EST

P.E.

March 27, 2025

DATE

GREENVILLE LOOP ROAD SIDEWALK

CROSS SECTIONS

SCALE: 1"=10' HOR. 1"=5' VER.

SHEET X-4

FEBRUARY 26, 2025 N:\PROJECT FILES\PED-BIKE FACILITY-GREENVILLE LOOP SW-SHINWOOD TO OMRD\DESIGN\DRAWINGS\GREENVILLE LOOP